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OIL SHALE TRACT C-b

INTERIM MONITORING REPORT

(November 1976 Through August 1977)

Submitted to:

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Area Oil Shale Supervisor
Conservation Division
U.S. Geological Survey
Grand Junction, Colorado

By:

C-b Shale Oil Venture

Ashland Colorado, Inc.

Occidental Oil Shale, Inc., Operator

October 14, 1977

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RADIAN
CORPORATION

DCN 77-100-056-03

AIR MONITORING REPORT
FOR
C-b SHALE OIL PROJECT
DECEMBER 1976
Report No. 28

5 April 1977

Presented to:
C-b Shale Oil Project
United Bank Tower
Denver, Colorado 80202

Prepared by:
Radian Staff

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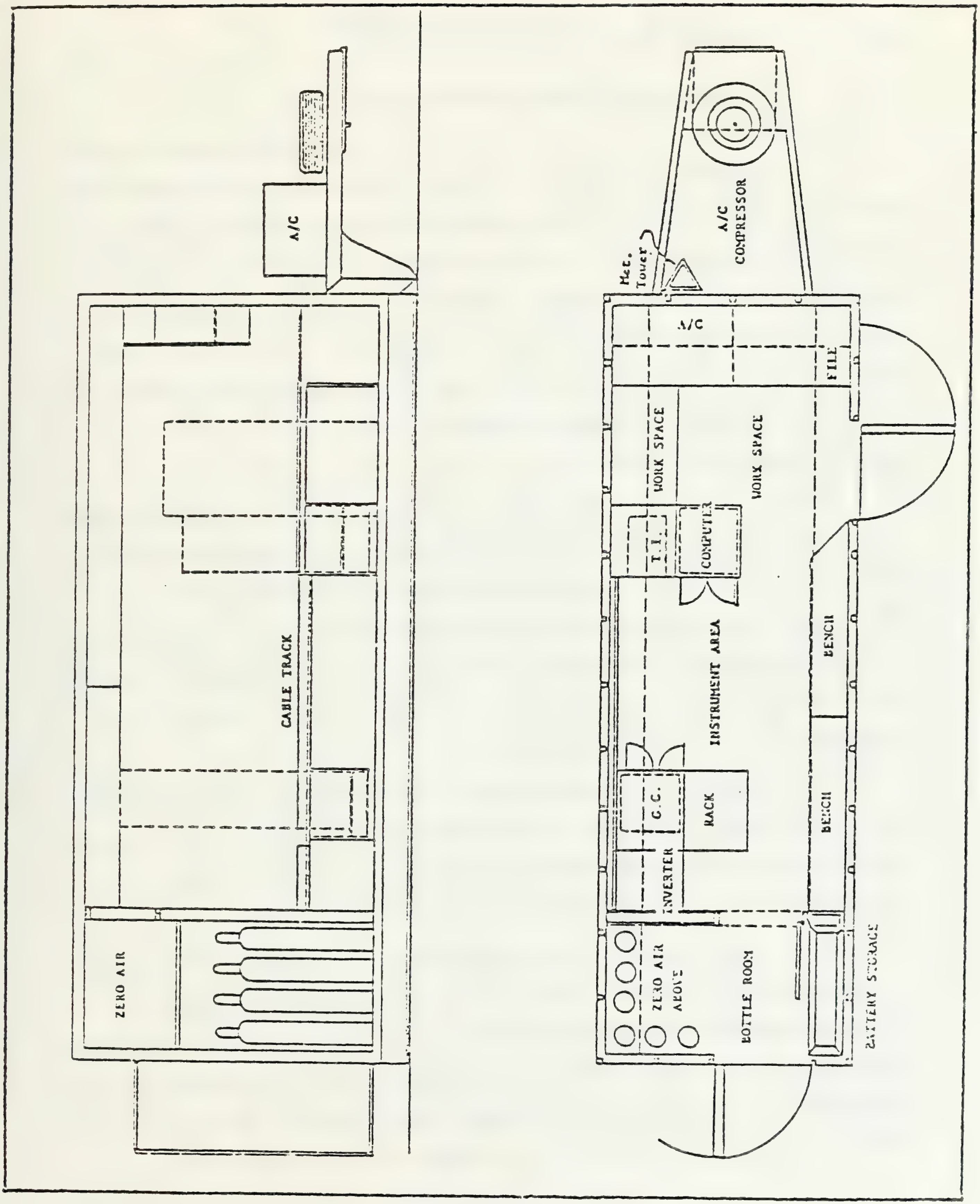
I. GENERAL DESCRIPTION OF AIR MONITORING PROGRAM

Radian Corporation, under contract to the C-b Oil Shale Project, is performing the data compilation and reporting of air quality and meteorological data at one monitoring site in Northwest Colorado. The site measures and records concentrations of particulates, sulfur dioxide, oxides of nitrogen, hydrogen sulfide, total hydrocarbons, methane, and carbon monoxide. A 200-foot meteorological tower provides wind direction, wind speed, temperature, and relative humidity data at four levels (8, 30, 100, and 200 feet). Other meteorological variables measured at the tower site are insolation, barometric pressure, and precipitation.

Figure I shows the configuration of the monitoring station. The station provides a sturdy and protective covering for the monitoring equipment.


A/C
CABLE TRACK
ZERO AIR
Met. Tower
A/C COMPRESSOR
A/C
FILE
WORK SPACE
WORK SPACE
T.I.
COMPUTER
INSTRUMENT AREA
BENCH
G.C.
RACK
BENCH
INVERTER
ZERO AIR ABOVE
BOTTLE ROOM
BATTERY STORAGE

II. DESCRIPTION OF INSTRUMENT SYSTEMS

A. Air Quality Instrumentation

Nitrogen oxides are measured with a Meloy Model NA520 analyzer. This dual-channel analyzer is based on the chemiluminescent principle and continuously monitors both NO_x and NO. A subtraction circuit in the instrument provides a continuous NO_2 output, but is not used in Radian's system. NO_2 is calculated once a second by the computer by subtracting the NO value from the NO_x value, thus avoiding any drift which might occur in the NO_2 output of the instrument. This instrument has a minimum detectable sensitivity of 5 ppb (parts per billion), and a linearity of ±1%.

Both sulfur dioxide and hydrogen sulfide are measured with Meloy Model SA185 sulfur analyzers. The hydrogen sulfide analyzer uses a Meloy Model NO_x-1 sulfur dioxide scrubber and the sulfur dioxide analyzer uses a Meloy Model H_2S-1 hydrogen sulfide scrubber. The Model SA185 is a continuous analyzer and utilizes the flame photometric principle of operation. The minimum detectable sensitivity is 5 ppb and the linearity of ±1%.

Ozone is measured with a Meloy Model OA350 analyzer. This instrument provides continuous measurement of ozone and is based on the chemiluminescent principle. The minimum detectable sensitivity is 0.5 ppb and the linearity is ±1%.

Total hydrocarbons, methane, and carbon monoxide are monitored with a Bendix Model 8200 gas chromatograph analyzer. This instrument uses a plume ionization detector and has a minimum detectable sensitivity of 5 ppb for all three components. The Model 8200 works on a five-minute cycle, i.e., one air sample is analyzed every five minutes, and the result is displayed for five minutes via a sample and hold circuit.

The air sample is drawn in through a glass cane and manifold supplied by the Ace Glass Company. The system has a 25mm diameter, and a constant air flow through the system is provided by an air pump rated at 60 cfm at 0" head pressure. The manifold has sampling ports to which 1/4" teflon lines to the instrument are connected. All joints in the sampling system are secured by O-ring compression fittings. The manifold is contained in a heated (100°F) chamber to prevent condensation of moisture. The teflon lines from the manifold to the instruments are insulated with 1/8" wall thickness rubber tubing.

The trailer has four heavy duty high volume particulate samplers (Hi-Vols). Fiberglass filter paper is used for collection of particulate samples and each filter is brought to a controlled humidity before weighing. Each Hi-Vol has a flow recorded to permit correction for changes in air flow as the filter becomes loaded with particulates. Each Hi-Vol runs for a 24-hour period (midnight to midnight) and is turned on and off by the computer. The Hi-Vols were designed following guidelines recommended by the Environmental Protection Agency and were manufactured by Radian.

In addition to the normal Hi-Vol particulate samples, a duplicate Hi-Vol sample is collected every sixth day on special filter paper for trace element analysis. Once each quarter these samples are composited and analyzed for gross radioactivity and trace element content.

B. Calibration Procedures

The trailer contains a Meloy Model RAD-1 calibration unit. This instrument provides a zero air supply, SO_2 span gas from an SO_2 permeation tube, and NO span gas obtained by precisely diluting bottled NO span gas. The calibration of all instruments is automatically performed once a day and is controlled by the computer. Each instrument is first switched to zero; the computer monitors the output of each channel and takes a new zero reading after a stable zero signal has been reached. This zero reading is compared by the computer to the zero reading obtained 24 hours before, and if a drift in excess of 10 ppb has occurred, an excess zero drift light for the channel in question is turned on on the System Status Panel. Next, span gas is supplied to each channel and the computer decides when a stable span value has been reached. This value is recorded and compared to the previous day's value. An excess span drift light on the System Status Panel is turned on if a drift exceeding 10 ppb occurs. The instruments are then returned to the monitor mode and after two minutes the computer resumes data taking.

The bottled NO gas used at each site was obtained from Precision Gas Products. Pre-purified grade hydrogen is used in the SO_2 analyzers.

The SO_2 permeation tubes were manufactured by Metronics Association, Inc. Their output has been verified by comparison to the output of National Bureau of Standards tube 10-42. Both SA185 analyzers in each trailer are calibrated with the SO_2 from the permeation tube. This instrument responds to the number of sulfur atoms per molecule; thus, SO_2 can be used to calibrate both the H_2S and SO_2 monitors.

The Model OA350 ozone analyzer has its own calibration system which provides a zero check and a span check. The ozone calibration system is verified by comparison to a calibrated ozone generator maintained in Radian's laboratory in Rifle.

The Model 8200 total hydrocarbon, methane, and carbon monoxide analyzer is calibrated with undiluted span gas obtained from AirCo's Rare and Specialty Gas Division. This span gas contains methane and carbon monoxide in air, the methane being used to calibrate both the total hydrocarbon channel and the methane channel. The Model 8200 is zeroed with air from a Bendix Model 8834 zero air unit. In addition, the instrument is electronically re-zeroed at the start of every five-minute cycle.

The Hi-Vol particulate samplers were calibrated using a Calibration Kit from General Metal Works.

C. Data Acquisition System

The basis of the data acquisition system is a Data General NOVA 1200 minicomputer. The NOVA, which has a basic cycle time of 1.2 μsec, is equipped with automatic program load and power fail/automatic restart features. The computer utilizes 16K 16-bit words of core memory. Analog-to-digital conversion is accomplished via an ADC built by Radian Corporation. The input/output unit for the system is Texas Instrument's KSR 733 keyboard/printer. This model teletype provides keyboard entry and hard copy printed output. The data are also recorded on a cassette magnetic tape unit with three drives. The cassette unit is utilized for program storage and loading as well as recording. To reduce wear on mechanical parts, the power to the teletype and cassette units is turned on only when the unit(s) is (are) to be used. Several important functions in the instruments as well as in the computer and the trailer are monitored by means of lights on a System Status Panel. These data lights are written onto cassette tape to monitor the complete status of the system every five minutes. The Data Acquisition System also monitors the presence of 100V power from the power lines. In its absence, the computer, which is powered by batteries, switches all trailer

systems to battery-provided power. If the line voltage is restored before the batteries are discharged to a specified level, the trailer system is switched back to line power.

D. Meteorological Instrumentation

200-Foot Meteorological Tower

The tower has instrumentation at four levels: 8 feet, 30 feet, 100 feet, and 200 feet. At all four levels, there are: wind speed, wind direction, and temperature and relative humidity sensors in a power-aspirated radiation shield. Temperature difference thermistors (also in power-aspirated radiation shields) and their associated circuitry take lapse rate measurements for the 30-foot to 100-foot layer and the 30-foot to 200-foot layer. In addition, this site has a Precision Spectral Pyranometer, a barometer, and a tipping bucket rain/snow gage.

The wind direction and speed apparatus used at each measurement level of the tower is the Model 1074-2 wind sensor by Meteorological Research, Inc. (MRI). This sensor has a 540° potentiometer for wind direction and a light chopper for wind speed. This sensor is rugged, with an all-weather coaxial cup and damped vane assembly. The prototype model has been in operation for years under the most demanding weather conditions, performing continuously with the utmost reliability. All of the wind sensors on the tower have been specially treated with a black paint which will promote warming of the exposed surfaces of the sensor and thereby reduce ice and snow accumulations on the moving parts of the apparatus. The specifications on the Model 1074-2 are as follows:

Wind Speed

- Starting Threshold: 0.75 mph.
- Response Distance: 18 feet (63% recovery).
- Flow Coefficient: 7.9 feet/Revolution.
- Accuracy: ±0.4 mph or 1% (whichever is greater).

Wind Direction

- Starting Threshold: 0.75 mph.
- Delay Distance: 4 feet (50% recovery).
- Damping Ratio: 0.5 to 0.6.
- Accuracy (540° system): ±1%.
- Range: 0° to 540°.

The relative humidity and temperature sensors are mounted within a power-aspirated radiation shield at each tower level. All aspirators and sensors are of the Model 840 Series by MRI. The aspirated shielded housing is designed to provide maximum radiation protection to the sensor. Ambient air is drawn into the shield and across the sensors at approximately 15 feet per second. This intake air is essentially sampled from a hemispherical space which is approximately 3-inch radius from the tube opening. Speed of the incoming air at the periphery of this hemisphere is approximately 1 mph.

The temperature sensor is comprised of a dual thermistor and resistor network. This circuit provides a linear resistance change with an air temperature change. The relative humidity sensor is placed alongside the temperature elements inside the shield where it is exposed to a constant flow of air. Circulation to both sides of the sensing element produces accurate monitoring with a good response time. The specifications on the sensing elements are as follows:

Temperature

- Accuracy: ±0.25°C.
- Range: -50°C to +50°C.

Humidity

- Accuracy: ±3.0% RH.
- Range: 0% to 100% Relative Humidity.

Measurements of temperature difference are taken for two layers, the 30-foot to 100-foot and the 30-foot to 200-foot layer. The thermistors and circuitry used for these measurements are separate from the thermistors measuring air temperature. The use of separate thermistors and circuitry to measure ΔT allows for much greater accuracy and resolution in the measurements, which is necessary for stability assessments. Two ΔT thermistors are at the 30-foot level, one is at the 100-foot level, and one is at the 200-foot level. All of these ΔT thermistors are mounted within power-aspirated radiation shields. The specifications on the ΔT instrumentation are as follows:

- Accuracy: ±0.1°C.
- Range of T Circuit (Lower Level-Upper Level): +9F° to -9F°.

All instrumentation, except at the ground level, is mounted at the end of 12-foot retractable booms. These booms are 3-inch box beams which are on rollers and can be retracted to the instrument platforms for instrument maintenance.

The meteorological tower itself is a 200-foot Rohn Model 80 Guyed Tower, designed for 40 pounds per square foot wind load with ½" of radial ice per EIA Standard RS-222-B, to

support four levels of meteorological equipment. The material consists of tower sections with a tapered base, three retractable booms 12-feet long, three outside work platforms, an inside ladder for climbing, two base ground kits and one anchor ground kit. The cable-type Safety Climbing Device consists of a cable and attachment mechanisms with a locking sleeve and safety belt. The tower is lighted and painted according to FAA specifications.

The signals from the tower instrumentation are fed from multiple signal cables into transmitters mounted at the base of the tower. After signals have been converted to analog signals, they are fed into a junction box, also at the tower base, where they are assimilated into one coaxial cable. The signals are then run underground within 3" PVC conduit to the A-to-D assembly, where they are processed. The transmitters are shielded and insulated from the elements. The signal cable is run underground in PVC conduit in order to minimize damage from the weather or various rodents in the region.

The auxiliary equipment at the tower site consists of a heated tipping bucket rain/snow gage, an analog barometer, and a Precision Spectral Pyranometer. The rain/snow gage is the Model P511-E unit by Weather Measure. In the case of this gage, the durability and reliability of a tipping bucket gage are combined with heavy-duty electric heaters to make this an all-purpose precipitation sensor. This gage may be used to measure snowfall and rainfall. An insulating cover of poly-vinyl chloride and a thermostatic control insure the proper gage temperature. The thermostatic control is adjustable from 0 to 35°C. Snow falling into the inlet funnel is melted. The resulting water (from rain or snow) drains into a precision tipping bucket mechanism which activates a mercury switch each time the bucket fills and tips. The gage is constructed of durable corrosion-resistant materials to provide many years of service. The

specifications for this gage are as follows:

- Orifice: 8 inches.
- Calibration: 0.01 inch.
- Accuracy: 0.5% (Calibrated at 0.5 in/hr).
- Sensor: Chrome-plated tipping buckets.
- Switch: Mercury, 0.1-second closure.
- Heat Control: Thermostat adjustment, 0 to 35°C.

The barometer is the B242 Analog Output Barometer by Weather Measure. This barometer provides an output voltage that is linearly proportional to pressure. The specifications on this instrument, which is mounted inside the monitoring trailer at the site, are as follows:

- Range: Specially designed for the 100 millibar interval from 725 millibars to 825 millibars.
- Resolution: Infinite.
- Linearity: ±0.5 millibar, over the 100 millibar interval.

The pyranometer at the site is the Eppley Precision Spectral Pyranometer. This instrument is used for the measurement of sun and sky radiation totally or in defined wavelength bands. The pyranometer is levelled and mounted atop a wooden stand 4½ feet from the ground surface. Care has been taken to eliminate the effects from all outside influences, such as reflection or shadows, on the pyranometer. The instrument characteristics are as follows:

- Sensitivity: 5 mv. per cal/cm^{0}/min.
- Independence: 300 ohms.
- Temperature dependence: Sensitivity constant to within ±1 percent over the ambient temperature range from -20 to +40°C.

- Linearity: Response linear up to intensities of 4 $cal/cm^2/min$.
- Response time: 1 second (i/e signal).

All instrumentation is factory-calibrated and is field-calibrated at various intervals. Sling psychrometers are used to calibrate the humidity sensors, known temperatures and/or resistances are used to calibrate the thermistors, and an rpm calibrating unit is used to calibrate the anemometers. The wind direction instrumentation is aligned to true north (reference direction) by means of a surveyor's transit.

III. MICROMETEOROLOGICAL AND TERRAIN FEATURES

The Piceance Creek Valley and C-b Shale Oil Tract are situated such that many microscale meteorological phenomena affect the region where the ambient air monitoring unit is located. Trailer 023 and its associated 200-foot meteorological tower are located atop a plateau to the south of the valley, high enough to be affected mostly by gradient flow conditions.

The elevation at the meteorological tower site (Trailer 023) is 6940 feet above sea level. The largest gradients in elevation in this area, of course, occur at the Piceance Creek Valley walls. However, the northern valley walls are slightly steeper than those at the southern boundary of the valley, which then slopes upward gradually toward the C-b Tract. The Piceance Creek Valley decreases in elevation from east to west in this area, so that nighttime katabatic cold-air drainage flows advect from east to west.

Site 023 is approximately 2.5 miles south of the Piceance Creek Valley. This location is relatively high compared to its surroundings, with the nearest points having elevations greater than 7000 feet being .5 miles to the south of the tower. The tower itself is on the top of a small knoll located between Scandard and Sorghum Gulches. Because of its location and the irregularities of the surrounding terrain, meteorological patterns are varied here.

Wind instrumentation is mounted at four levels of the meteorological tower: 8 feet, 30 feet, 100 feet, and 200 feet. The top level of the tower generally remains in gradient wind flow. That is, the winds at that level are normally generated

by synoptic-scale features and are usually separated from terrain features and micrometeorological circulations. Occasionally, a weak anabatic flow influence is experienced. However, such is not the case with the three lowest measurement levels. To varying degrees, these levels are influenced by both the katabatic and anabatic circulation cells. However, when strong pressure gradient forces exist in the region and the synoptic-scale wind flow is strong, all four tower levels will reflect a gradient wind flow, with the winds increasing in strength with increasing height.

The terrain atop the plateau is generally barren and fairly rugged, with a few scattered small trees. The topsoil dries rapidly and is very fine, resulting in blowing dust when dry, windy conditions exist. In the Piceance Creek Valley, the terrain is fairly grassy and flat, with steep valley walls on either side. Surface winds are normally rather light in this valley unless channelling effects occur.

During clear nights with rather light pressure gradient-induced winds, rapid radiational cooling will occur in the region because of the barren nature of the terrain and the generally dry character of the air in this portion of the country. As a result, the diurnal range of temperatures will be extremely large. Because of the katabatic flow in the valley, nighttime temperatures will generally be lower in the valley than on the plateau. During the winter, especially, temperatures in the valley may be 20°F lower than they are on the plateau during the early morning hours.

IV. OPERATING TIME ANALYSIS FOR EACH SITE

This section presents the operating statistics for each of the major subsystems contained in the monitoring station. Table I shows the specific number of hours that each of these subsystems was inoperative for the month. The column labeled "DIGITIZING SYSTEM" indicates the entire data acquisition system; therefore, downtime hours appearing in this column means total loss of data. These instances include, in addition to computer downtime, power failures, no power available, and self-automated shutdown periods such as during air conditioner malfunctions.

Calibration time is not considered to be downtime and is, therefore, not included in the downtime figures. The amount of time used in calibrating the instruments is given at the bottom of the downtime analysis table and is reported as total calibration hours for each channel for the entire month. As is evident in the calibration figures, channels can be calibrated independently of one another. No calibration time is given for particulate monitoring since Hi-Vol calibration occurs infrequently and only during the off-duty cycle for each Hi-Vol while another Hi-Vol is taking data.

TABLE I.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 023

DATE	DIGITIZING SYSTEM	NOX	NO	SO2	WS	WD	RH	TOUT	PYR	H2S	THC	CH4	CO	O3	PRES	RAIN	PART
12/ 1	0.	8.	8.	0.	0.	2.	0.	0.	0.	0.	5.	5.	1.	1.	0.	0.	0.
12/ 2	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.	5.	6.	0.	0.	0.	0.
12/ 3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	23.	0.	0.	0.	0.	0.	0.
12/ 4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	23.	0.	1.	0.	0.	0.	0.
12/ 5	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	18.	8.	1.	0.	0.	0.	0.
12/ 6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.	11.	0.	13.	0.	0.	0.
12/ 7	0.	0.	0.	0.	0.	0.	13.	0.	0.	0.	11.	11.	0.	9.	0.	0.	0.
12/ 8	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	24.	9.	0.	0.	0.	0.	0.
12/ 9	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.
12/10	0.	0.	0.	0.	0.	2.	24.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.
12/11	0.	2.	2.	0.	0.	0.	24.	0.	0.	0.	22.	0.	0.	0.	0.	0.	0.
12/12	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	24.	0.	0.	0.	0.	0.	24.
12/13	0.	0.	0.	0.	0.	0.	24.	13.	0.	0.	18.	9.	9.	0.	0.	0.	0.
12/14	0.	0.	0.	0.	0.	0.	24.	24.	0.	0.	10.	10.	10.	0.	0.	0.	0.
12/15	0.	0.	0.	0.	0.	1.	24.	24.	0.	0.	3.	3.	0.	0.	0.	0.	0.
12/16	1.	9.	9.	0.	0.	0.	23.	12.	0.	0.	3.	3.	0.	0.	0.	0.	0.
12/17	0.	24.	24.	0.	0.	0.	24.	0.	0.	0.	2.	2.	0.	0.	0.	0.	0.
12/18	0.	10.	10.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/19	0.	0.	0.	0.	0.	1.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/20	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/21	0.	2.	2.	0.	0.	0.	16.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/22	0.	0.	0.	0.	0.	3.	9.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/23	0.	0.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/24	0.	0.	0.	0.	0.	2.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/25	0.	0.	0.	0.	0.	0.	7.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
12/26	0.	0.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/27	0.	0.	0.	0.	0.	1.	14.	0.	0.	0.	6.	6.	0.	0.	0.	0.	0.
12/28	2.	8.	8.	3.	0.	0.	22.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.
12/29	0.	9.	9.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/30	0.	0.	0.	0.	0.	1.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/31	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAL TIME		24.	24.	20.	0.	0.	0.	0.	0.	31.	27.	30.	30.	15.	0.	0.	

TABLE I.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 023

DATE	DIGITIZING SYSTEM	WS1	WD1	RH1	TMP1	WS2	WD2	RH2	TMP2	WS3	WD3	RH3	TMP3	WS4	WD4	RH4	TMP4	DT1	DT2
12/ 1	0.	0.	2.	0.	0.	0.	2.	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	14.	10.
12/ 2	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	23.	0.
12/ 3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/ 4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/ 5	0.	0.	2.	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	24.	0.
12/ 6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/ 7	0.	0.	0.	0.	0.	0.	0.	13.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/ 8	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/ 9	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/10	0.	0.	2.	0.	0.	0.	2.	24.	0.	0.	2.	0.	0.	0.	1.	0.	0.	24.	0.
12/11	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/12	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/13	0.	0.	0.	0.	0.	0.	0.	24.	13.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/14	0.	0.	0.	0.	0.	0.	0.	24.	24.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/15	0.	0.	1.	0.	0.	0.	1.	24.	24.	0.	1.	0.	0.	0.	1.	0.	0.	24.	0.
12/16	1.	0.	0.	0.	0.	0.	0.	23.	12.	0.	0.	0.	0.	0.	0.	0.	0.	23.	0.
12/17	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/18	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/19	0.	0.	1.	0.	0.	0.	1.	24.	0.	0.	1.	0.	0.	0.	1.	0.	0.	24.	0.
12/20	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/21	0.	0.	0.	1.	0.	0.	0.	16.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/22	0.	0.	3.	0.	0.	0.	3.	9.	0.	0.	2.	0.	0.	0.	2.	0.	0.	24.	0.
12/23	0.	0.	0.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/24	0.	0.	2.	0.	0.	0.	2.	6.	0.	0.	2.	0.	0.	0.	2.	0.	0.	24.	0.
12/25	0.	0.	0.	0.	0.	0.	0.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/26	0.	0.	0.	0.	0.	0.	0.	6.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.
12/27	0.	0.	2.	0.	0.	0.	1.	14.	0.	0.	1.	0.	0.	0.	0.	0.	0.	14.	0.
12/28	2.	0.	0.	0.	0.	0.	0.	22.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/29	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	5.	0.	0.	0.
12/30	0.	0.	1.	0.	0.	0.	1.	24.	0.	0.	1.	0.	0.	0.	0.	24.	0.	0.	0.
12/31	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.
CAL TIME		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TABLE I.
DOWNTIME HOURS FOR C-B SHALF OIL PROJECT

SITE 023

DATE	BWS1	HWD1	VWD1	BWS2	HWD2	VWD2	BWS3	HWD3	VWD3	WSD1	WSD2	WSD3	WSD4	HSD1	VSD1	HSD2	VSD2	HSD3	VSD3
12/ 1	0.	1.	24.	0.	1.	0.	0.	1.	0.	4.	3.	2.	2.	1.	24.	3.	0.	3.	0.
12/ 2	0.	0.	23.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	23.	1.	0.	1.	0.
12/ 3	0.	0.	24.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	24.	1.	0.	1.	0.
12/ 4	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	24.	1.	0.	1.	0.
12/ 5	0.	1.	24.	0.	0.	0.	0.	0.	0.	3.	1.	2.	1.	2.	24.	1.	0.	1.	0.
12/ 6	0.	0.	24.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	2.	24.	1.	0.	1.	0.
12/ 7	0.	0.	12.	0.	0.	0.	0.	10.	0.	0.	0.	0.	0.	0.	12.	0.	0.	0.	0.
12/ 8	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	1.	0.	0.	0.
12/ 9	0.	2.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	0.	0.	0.	0.	0.
12/10	0.	2.	0.	0.	1.	0.	0.	0.	0.	3.	3.	3.	3.	3.	0.	2.	0.	1.	0.
12/11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	0.	1.	0.	1.	0.
12/12	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.	2.	0.	1.	0.	1.	0.
12/13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/14	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.	2.	1.	0.	2.	0.	2.	0.
12/15	0.	3.	0.	0.	1.	0.	0.	0.	0.	2.	2.	2.	2.	3.	0.	1.	0.	1.	0.
12/16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	0.	0.	1.	0.
12/17	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.	2.	3.	0.	1.	0.	1.	0.
12/18	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
12/19	0.	1.	0.	0.	1.	0.	0.	1.	0.	2.	1.	2.	3.	1.	0.	2.	0.	2.	0.
12/20	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	0.	1.	0.	2.	0.
12/21	2.	0.	8.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	8.	0.	0.	0.	0.
12/22	0.	2.	11.	0.	1.	0.	0.	1.	0.	3.	4.	3.	3.	2.	11.	2.	0.	1.	0.
12/23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/24	0.	1.	0.	0.	1.	0.	0.	1.	0.	2.	3.	3.	2.	2.	0.	2.	0.	2.	0.
12/25	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	0.	1.	0.
12/26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/27	0.	2.	0.	0.	1.	0.	0.	1.	0.	3.	2.	2.	1.	2.	0.	1.	0.	1.	0.
12/28	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	1.	0.	1.	0.
12/29	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12/30	0.	2.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	1.	2.	0.	1.	0.	0.	0.
12/31	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
CAL TIME	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

V. MONTHLY METEOROLOGICAL SUMMARY

A. Summary of the Meteorological Conditions over North America during December 1976

December 1976 brought colder than normal temperatures to all sections of the United States east of the Continental Divide. Monthly precipitation totals were much below normal in the western United States. The southeastern United States experienced slightly above normal monthly precipitation totals while all other sections of the country experienced mostly below normal monthly precipitation totals. The long wave circulatory pattern for December featured a mean ridge in the western United States and a long wave trough in the eastern section of the country. The ridge in the West accounted for the below normal precipitation in that section of the country. The southerly location of the storm tracks and polar front jet stream accounted for the below normal precipitation in the northern section of the United States.

The long wave circulation was meridional (north-south) from the 1st through the 12th and from the 24th through the 29th. Zonal (west-east) circulation prevailed from the 13th through the 22nd and on the 30th and 31st.

Extratropical low pressure systems were frequent in the United States during December because of the strength of the polar front jet stream. Numerous low pressure systems developed during the month, affecting primarily the Great Lakes. The dates of occurrence and locations of these low pressure systems are as follows:

7th: Gulf Coast
8th: Pacific Northwest
9th: Northern Great Plains
10th: Great Lakes
11th: New England
16th: Great Lakes
17th: Great Lakes
20th: Great Lakes
21st: New England
22nd: Great Lakes
23rd: Great Lakes
26th: New England, Atlantic Seaboard
27th: Northern Great Plains
28th: Great Lakes, Atlantic Seaboard
29th: Great Lakes, Atlantic Seaboard
30th: Northern California Coast, New England

On a sectional basis, the following temperature and precipitation anomalies existed during December:

Section	Temperature	Precipitation
Northeast	Much below normal	Slightly below normal
Atlantic Seaboard	Below normal	Below normal
North Central	Below normal	Below normal
Central	Slightly below normal	Much below normal
Southeast	Below normal	Slightly above normal
Southwest	Below normal	Variable; mostly slightly above normal
Rockies	Above normal	Much below normal
West and Pacific Northwest	Near normal	Much below normal

B. Summary of the Meteorological Conditions in Northwestern and West Central Colorado during December 1976

Grand Junction, Colorado, sixty miles to the south-southwest of the Tract C-b, received a total of only 0.01 inch of precipitation during December, which is 0.54 inch below the monthly normal of 0.55 inch. According to the National Weather Service Office in Grand Junction: "This is the 2nd driest December of record. The driest was 1900 with a trace." Grand Junction received 0.1 inch of snow during December. Measurable precipitation ($\geq$.01 inch) occurred on December 5th. The region received 84 percent of the possible monthly sunshine. Sky cover by cloudiness averaged 3.8 out of a possible 10 during the daylight hours and 3.3 out of a possible 10 during the entire month. The region had seventeen clear days, six partly cloudy days, and eight cloudy days during the month.

Air mass changes were infrequent during December. Only two frontal passages occurred during December, which is far below average. This decrease in cold frontal passages was due to the presence of an upper-level ridge over the western United States for most of December. Temperatures in the Tract C-b were cool due to seasonal influences. Transport winds were slightly stronger than those which prevailed during November. A maritime polar cold frontal passage occurred on the 9th and a continental polar cold frontal passage occurred on the 12th.

C. Summary of the Meteorological Conditions in the Oil Shale Tract C-b Region During December 1976

An upper-level ridge over the western United States was responsible for the below-normal precipitation totals and slightly below normal average temperatures which occurred during December. Since a long wave trough was located in the eastern United States, most of the continental polar outbreaks during the month were directed to the east of the Tract C-b into the eastern sections of the country. In addition, the long wave ridge in the western United States prevented most Pacific (maritime polar) fronts from penetrating the western United States. No precipitation occurred in the Tract C-b area during December. Slightly below normal temperatures affected the Tract C-b area, a reflection of the cold air which often stagnates in the Great Basin during the winter months.

A maritime polar cold frontal passage occurred on December 9th and a continental polar cold frontal passage occurred on December 12th. These fronts were fairly mild since the major thrust of the cold air was to the eastern half of the United States.

The monthly average temperatures recorded at the meteorological tower during December 27.4°F at 8 feet; 26.0°F at 30 feet; 27.2°F at 100 feet; and 25.6°F at 200 feet. These averages are approximately 7F° lower than those recorded in November. The warmest days of the month at the meteorological tower were the 2nd, 3rd, 4th, 8th, 9th, 13th, 17th, and 18th. The coolest days were the 6th and 25th. The highest temperature recorded at the meteorological tower during December was 49°F at the 8-foot level on the 17th. The coldest temperature recorded at the meteorological tower was 8°F at the 8- and 30-foot levels on the morning of the 25th. This reading also occurred at the 30-foot level on the morning of the 6th.

Monthly average relative humidities during December were nearly the same as those that prevailed during November. Therefore, since average temperatures were lower in December than in November, the average moisture content of the air was slightly lower during December (in order to maintain the same average relative humidity). At the meteorological tower, the monthly average relative humidities were 52.7 percent at 8 feet; 57.4 percent at 100 feet; and 53.3 percent at 200 feet. These relative humidites correspond to dew points of 12.5°F, 13°F, and 12°F, respectively. The relative humidity sensor at the 30-foot level was inoperative for most of the month. The most humid days of the month were the 1st, 5th, 6th, 10th, and 31st. The driest days were the 16th, 17th, and 18th.

Winds at the meteorological tower during December were only slighly stronger than the winds during November. Resultant wind vectors at the meteorological tower during December were 200.7 degrees at 1.6 miles per hour at 8 feet; 200.4 degrees at 2.3 miles per hour at 30 feet; 206.0 degrees at 2.8 miles per hour at 100 feet; and 214.5 degrees at 3.6 miles per hour at 200 feet. The scalar average wind speeds associated with these resultant wind vectors were 3, 5, 6, and 6 miles per hour, respectively. The Ekman spiral and Ekman effect, i.e., a veering in direction and increase in speed as a function of increasing height above the surface, were evident during December. A reference to the December wind roses for the meteorological tower indicates that the winds at that location were primarily south-southwesterly, with a relatively high frequency of occurrence of southerly and southwesterly winds in addition.

The windiest days of the month at the meteorological tower were the 7th, 8th, 9th, 23rd, 27th, and 31st. The days having the lightest winds were the 11th, 12th, 14th, 16th, 17th, 20th, and 22nd. The highest five-minute average wind speed recorded at the tower during December was 40 miles per hour at the 200-foot level on the 16th. On a diurnal basis, the strongest winds at the tower occurred between 1300 and 1600 hours, when vertical mixing and the downward transfer of momentum were maximized. The winds were lightest during the early morning hours, between 0500 and 0900 hours, when the friction layer was stable.

Precipitation totals in the Tract C-b Monitoring Network during December were generally very much below normal. No precipitation was received at the meteorological tower during December. Only 0.01 inch was received at Grand Junction.

The monthly average station pressure at the meteorological tower during December was 790.5 millibars. This reading is 1.4 millibars lower than the November average station pressure of 791.9 millibars. The highest daily average station pressures occurred on the 1st and 2nd. The lowest daily average station pressures occurred on the 9th, 30th and 31st.

Cloudiness decreased slightly in the Tract C-b region during December, compared to the November cloud cover and insolation statistics. The region received an isolated total of 5680.4 langleys, which is equivalent to a daily average insolation total of 183 langleys/day. This average is slightly below the National Weather Service standard for December of 200 langleys/day in the Tract C-b region. On a diurnal basis, the greatest solar radiation rates occurred between 1200 and 1300 hours. The greatest daily radiation totals were received on the 1st and 20th. The lowest daily solar radiation totals were received on the 5th and 6th. The greatest five-minute radiation total received during

December was 4.75 langleys (a rate of 0.95 langleys/minute), which occurred on the 9th and 10th. The largest hourly insolation total received during December was 50 langleys, which occurred on the 9th between 1100 and 1200 hours. Because of the progressively decreasing solar elevations and the increasingly shorter periods of daylight that prevailed during the first two-thirds of December, the total possible solar radiation which could be received during a day decreased monotonically throughout that period. During the last one-third of December, progressively increasing solar elevations provided for increasingly longer periods of daylight. Thus, the total possible solar radiation which could be received during a day increased monotonically throughout the last one-third of December.

The slight decrease in cloudiness and decrease in insolation which affected the Tract C-b during December caused the unstable stability classes to become less common than they had been in November. Using the Pasquill method of stability determination, "C" stability (slightly unstable) was the most common stability, occurring during 166 daytime hours, or 57.2 percent of the time. In decreasing order of frequency, "D" (neutral) stability occurred during 88 hours or 30.3 percent of the time, and "B" (very unstable) stability occurred during 36 hours, or 12.4 percent of the time. "A" (extremely unstable) stability did not occur.

Using the lapse rate method of stability determination ($\frac{dT}{dz}$), the slightly stable ("E") and extremely stable ("F") stability classes were the most prevalent during December. In general, stable and/or neutral conditions prevailed during the nighttime hours and unstable and/or neutral conditions prevailed during the day. The following table (Table A) is a diurnal breakdown of the various stability classes. As one proceeds from "A" to "F", the stability class ranges from extremely unstable to extremely stable. The column labeled "number of occurrences" indicates the number of times a particular stability class

TABLE A

Stability Class/Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Occurrences
Level I $(\frac{dT}{dz})$ 30 Feet to 100 Feet																									
A:										1	1	2	1												5
B:											3	2	2	3	2	3									15
C:										3						1	2								6
D:	1	1	1					1	1				1	1	2	1	2	3	1	1	1	1			19
E:				2	3	2	2	1	1	2							1	1	2	2	1	2	2	1	25
F:	4	4	4	3	3	3	3	3	3									1	2	2	3	2	3	4	47
Level II $(\frac{dT}{dz})$ 30 Feet to 200 Feet																									
A:						1			3	10	14	13	11	10	10	7	7	1	0	2	1	0	0	0	90
B:	2	2	2	3	3	2	2	1	2	5	13	14	14	15	16	19	15	7	6	3	1	1	2	2	142
C:	2	3	1	2	1	1	2	3		3	2	3	4	2	1	3	6	0	2	3	1	4	2	1	52
D:	4	3	5	2	4	4	4	2	4	7	2	1	2	4	3	2	3	14	12	8	9	6	7	7	119
E:	10	8	12	13	8	8	11	13	10	6								9	9	13	14	11	11	8	174
F:	12	14	10	10	14	14	11	11	11										2	2	5	9	9	13	147

A: Extremely unstable
B: Very unstable
C: Slightly unstable
D: Neutral
E: Slightly stable
F: Extremely stable

appeared during the month on an hourly basis. Level I indicates that temperature changes versus height values ($\frac{dT}{dz}$) were considered between 30 feet and 100 feet. Level II indicates that the values of $\frac{dT}{dz}$ were considered between 30 feet and 200 feet. The delta temperature circuitry between the 30- and 100-foot levels was inoperative during most of the first 26 days of December.

Using the standard deviation of the horizontal wind (σ_θ) method of stability determination, "D" stability was the most common stability classification at the meteorological tower because of the moderately strong winds that normally occurred at that location. The stability distributions for the 30-, 100-, and 200-foot levels were similar, with only a slight trend toward increasing stability as a function of increasing height. The 8-foot level of the tower exhibited higher percentages of the unstable classes because of excessive mechanical turbulence.

The bivanes at the 100- and 200-foot levels of the meteorological tower indicated a pattern of upward vertical motion (negative vertical directions) during the month, while the 30-foot level produced no net vertical motion during December. Upward vertical motion was more pronounced during the nighttime and early morning hours at the 30- and 100-foot levels during December (probably because of lower wind speeds), but this diurnal pattern was reversed (i.e., upward motions were less pronounced) at the 200-foot tower level.

The σ_θ values obtained at the 30-, 100-, and 200-foot levels using the bivanes compared favorably with the σ_θ values obtained at those levels using the standard wind instrumentation.

VI. DATA PRESENTATION AND SUMMARY

This section includes summaries for various recorded data at the monitoring sites. The data presentations indicate the variability of pollutant concentrations and meteorological parameters with location and time. In addition, the presentations indicate the functional dependence of pollutant concentration with wind direction. All data except suspended particulates (24-hour samples) are sampled once each second, but recorded as five-minute arithmetic averages of the one-second samples. This averaging technique tends to smooth instantaneous maximum values, and is especially evident when comparing wind gusts to local weather bureau data.

Inherent to any data acquisition system is random noise both from the recording instruments and quantization in the analog-to-digital conversion. The lower threshold for all analytical instruments is twice the maximum noise level generated by the instruments. This lower threshold is 5 ppb for all instruments, except for the ozone analyzer, for which it is 0.5 ppb. Therefore, any values appearing in the data presentations that are less than 5 ppb indicate only a trace of pollutant in question and should not be construed to be absolute levels. In addition, the recorded quantity is simply random noise and averages tend toward zero. Thus, when concentrations are below the lower threshold of the analytical instruments they may appear as a zero entry in the data presentation which does not indicate absolute zero concentration.

All pollutant data (except for particulate data) is taken at the monitoring site in integer parts per billion (ppb) but is presented here in micrograms per cubic meter ($\mu g/m^3$)

assuming standard temperature and pressure of 25°C and 760 mmHg (1013.2 millibars), respectively. The scale factors required to convert μg/m³ at standard conditions back to ppb for the various pollutants are given in the following table.

POLLUTANT	TO CONVERT μg/m³ AT 25°C AND 760 mmHg TO ppb MULTIPLY BY
NO_x	.534
NO	.534
NO_2	.534
SO_2	.384
H_2S	.723
THC	1.536
CH_4	1.536
CO	.877
O_3	.512

The units of the meteorological parameters are given in the table. It should be noted here that inside temperature is monitored and recorded as a functional part of the system but is not presented in this report.

Table III displays the monthly statistics for each monitoring station for the month. To insure statistical significance, and to reduce the possibility of introducing a bias in the presentation, averages are computed only when at least 50 percent of the samples are present, except for relative humidity and temperature, in which case 75 percent of the samples is required. If less than the required samples are present for a particular parameter, that entry will be blank. The number of

samples present for a particular channel is defined as the total possible number of five-minute samples for the averaging time less the computer downtime less the channel downtime less the channel calibration time. The averages in Table III are arithmetic averages with the following exceptions:

- Wind speed and wind direction are computed using a vector averaging technique where the wind speed is treated as the vector magnitude.
- Particulate averages are computed as the geometric mean.

Table IV displays the daily averages. Again, 50 percent of the five-minute samples are required in order to compute an average except for the cases of relative humidity and temperature which require 75 percent. A blank entry indicates an insufficient number of five-minute samples present for that day. Wind speed, wind direction, and particulate averages are computed the same way as described in Table III.

Table V presents the maximum daily five-minute average retained in the data base as well as the time of occurrence. A five-minute maximum average is printed if any samples are present for that day. Therefore, the maximum five-minute average for a channel which experienced considerable downtime or calibration time during the day in question may be misrepresentative of the maximum expected for that channel on that day.

Table VI indicates the five largest averages for various averaging times. The table shows the period of time covered by the average. Maxima are chosen so that time segments

are independent. The maximum averages reported are found using a 'sliding average' technique with the exception of the 24-hour particulate average, which is computed from midnight to midnight. For averaging times less than or equal to three hours, the sliding average is stepped one five-minute sample at a time. For longer averaging times the step size is twelve samples or one hour. For averaging times less than or equal to one hour 100 percent of the five-minute samples must be present to compute an average. Averaging times greater than one hour require 90 percent. Whether or not a sliding average is computed is solely determined by the number of samples present in that averaging time and is independent of daily and monthly averaging criteria.

To demonstrate the functional dependence of recorded parameters upon wind direction, Table VII shows pollutant concentration displayed in a bi-variate distribution with wind direction. The tables display the total number of five-minute samples occurring in each concentration and wind speed class. The mean concentration for all samples occurring in each wind class are also shown. This distribution demonstrates the dependence of high pollutant concentrations upon wind direction. Appendix A shows the stability wind rose diagrams.

The wind speed classifications used in Appendix A are based on the Beaufort wind scale classification system. This is a system of estimating and reporting wind speeds, invented in the early nineteenth century by Admiral Beaufort of the British Navy. It was originally based on the effects of various wind speeds on the amount of canvas that a full-rigged frigate of the period could carry, but has since been modified and modernized. In its present form for international meteorological use it equates: (a) Beaufort force (or Beaufort number); (b) wind speed;

(c) descriptive terms; and (d) visible effects upon land objects or the sea surface. One land adaptation is the NRM wind scale.

The six basic wind speed classifications used in the report are: 1-3 knots, 4-6 knots, 7-10 knots, 11-16 knots, 17-21 knots, and winds of greater than 21 knots. The following table is a complete description of the Beaufort Wind Scale, taken from Physical Climatology, by Helmut Landsberg, 1969.

BEAUFORT WIND SCALE FOR OBSERVATIONS AT LAND STATIONS

Force	Explanatory Title	Specification for Use	Corresponding Limits of Wind Speed at 10 meters ab.grd.				
			Mi/hr.	Knots	Km/hr.	M/sec.	Ft/sec.
0	Calm	Smoke rises vertically	<1	<1	<1	0.3	1
1	Light air	Direction of wind shown by smoke drift, but not by wind vanes	1-3	1-3	1-5	0.3-1.5	1-5
2	Light breeze	Wind felt on face:leaves rustle:ordinary vane moved by wind	4-7	4-6	6-11	1.6-3.3	6-11
3	Gentle breeze	Leaves and small twigs in constant motion;wind extends light flat	8-12	7-10	12-19	3.4-5.4	12-18
4	Moderate breeze	Raises dust and loose paper:small branches are moved	13-18	11-16	20-28	5.5-7.9	19-26
5	Fresh breeze	Small trees in leaf begin to sway:wavelets formed on inland waters	19-24	17-21	29-38	8.0-10.7	27-35
6	Strong breeze	Large branches in motion:whistling heard in telegraph wires:umbrellas used with difficulty	25-31	22-27	39-49	10.8-13.8	36-45
7	High wind	Whole trees in motion:inconvenience felt when walking against wind	32-38	28-33	50-61	13.9-17.1	46-56
8	Fresh gale	Breaks twigs off trees:generally impedes progress	39-46	34-40	62-74	17.2-20.7	57-68
9	Strong gale	Slight structural damage occurs (chimney pots and slates removed)	47-54	41-47	75-88	20.8-24.4	69-80
10	Whole gale	Seldom experienced inland:trees uprooted: considerable structural damage occurs	55-63	48-55	89-102	24.5-28.4	81-93
11	Storm	Very rarely experiences:accompanied by widespread damage	64-72	56-63	103-117	28.5-32.6	94-106
12	Hurricane		73-82	64-71	118-133	32.7-36.9	107-121
13			83-92	72-80	134-149	37.0-41.4	122-136
14			93-102	81-89	150-166	41.5-46.1	137-151
15			104-114	90-99	167-183	46.2-50.9	152-166
16			115-125	100-108	184-201	51.0-56.0	167-183
17			126-136	109-118	202-220	56.1-61.2	184-201

Source: Table 36 (p.119) in R.J. List (1951):Smithsonian Meteorological Tables:Smithsonian Miscell.Coll.Vol. 114.

Table VIII demonstrates the diurnal variation of various recorded parameters. Hourly averages are determined by arithmetically averaging five-minute samples, except for wind direction averages which are computed vectorially assuming unit vector magnitudes. Totals in the diurnal wind direction tables are vector averages of the columns and rows. For all parameters, a blank entry in the diurnal variation table indicates that less than half (i.e., less than 6) of the five-minute samples for that hour are present.

All times given in the data presentation are Mountain Standard Time.

To facilitate comparison of recorded concentrations to ambient air quality standards, the following regulations are presented.

TABLE II

FEDERAL AND COLORADO STANDARDS

				Designated Area		
	Primary	Secondary	Non-Designated Area	1973	1976	1980
Particulate						
Annual G. M.	75 μg/m³	60 μg/m³	45 μg/m³	70 μg/m³	55 μg/m³	45 μg/m³
24 Hr. Max.*	260	150	150	200	180	150
Sulfur Oxides						
Annual	80(.03ppm)		--	60(.02ppm)	25(.009ppm)	10(.004ppm)
24 Hr. Max.*	365(.14ppm)		15(.005ppm)	300(.1ppm)	150(.05ppm)	55(.02ppm)
3 Hr. Max.*	--	1300(.5ppm)	--	--	--	--
1 Hr. Max.**	--	--	--	800(.28ppm)	300(.1ppm)	--
Oxidant						
1 Hr. Max.*	160(.08ppm)	160				
8 Hr. Max.*	--	--				
Annual	--	--				
Hydrocarbons						
3 Hr. Max.* 6-9 a.m.	160(.24ppm)	160				
Carbon Monoxide						
Max. 8 Hrs.*	10000(9ppm)	10000				
Max. 1 Hr.*	40000(35ppm)	40000				
Nitrogen Dioxide						
Annual	100(.05ppm)	100				

Units are micrograms per cubic meter and ppm in parenthesis.

*Not to be exceeded more than once per year.

**Not to be exceeded more than once per month.

TABLE III
AVERAGES FOR DECEMBER 1 THRU 31

```
                         TABLE III. AVERAGES FOR DEC    1 THRU 31
         (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

       NITROGEN OXIDES(NOX)                 NITRIC OXIDE(NO)                 NITROGEN DIOXIDE(NO2)

  SITE   023                                023                              023
         2,7                                1,1                              1,7
-----------------------------------------------------------------------------------------------------

        SULFUR DIOXIDE(SO2)                  PYRANOMETER                      HYDROGEN SULFIDE

  SITE   023                                023                              023
          .1                             5680,4                               .5
-----------------------------------------------------------------------------------------------------

        TOTAL HYDROCARBONS                      METHANE                   NON-METHANE HYDROCARBONS

  SITE   023                                023                              023
      1055.2                              979.3                            118,8
-----------------------------------------------------------------------------------------------------

         CARBON MONOXIDE                         OZONE                      BAROMETRIC PRESSURE

  SITE   023                                023                              023
       431,8                               66,7                            790,5
-----------------------------------------------------------------------------------------------------

        TOTAL PRECIPITATION                  PARTICULATE

  SITE   023                                023
         .00                                4,1
-----------------------------------------------------------------------------------------------------
```

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                         TABLE III, AVERAGES FOR DEC    1 THRU 31
         (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
               TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
               PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                            WIND SPEED

  SITE 023
      (  8-FT)              ( 30-FT)                (100-FT)                (200-FT)
        1.6                   2.3                     2.8                     3.6
-------------------------------------------------------------------------------------------

                                          WIND DIRECTION

  SITE 023
      (  8-FT)              ( 30-FT)                (100-FT)                (200-FT)
      200.7                 200.4                   206.0                   214.5
-------------------------------------------------------------------------------------------

                                        RELATIVE HUMIDITY

  SITE 023
      (  8-FT)              ( 30-FT)                (100-FT)                (200-FT)
       52.7                                          57.4                    53.3
-------------------------------------------------------------------------------------------

                                           TEMPERATURE

  SITE 023
      (  8-FT)              ( 30-FT)                (100-FT)                (200-FT)
       27.4                  26.0                    27.2                    25.6
-------------------------------------------------------------------------------------------
```

TABLE IV
DAILY AVERAGES FOR DECEMBER 1 THRU 31

TABLE IV, DAILY AVERAGES FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	NITROGEN OXIDES(NOX)	NITRIC OXIDE(NO)	NITROGEN DIOXIDE(NO2)
SITE	023	023	023
DATE			
12/ 1			
12/ 2	7.3	2.5	4.8
12/ 3	6.2	.0	6.2
12/ 4	2.0	2.0	.0
12/ 5	2.3	2.3	.0
12/ 6	.7	.7	.0
12/ 7	1.0	1.0	.0
12/ 8	.4	.4	.0
12/ 9	.3	.3	.0
12/10	1.7	.3	1.4
12/11	6.2	.0	6.2
12/12	7.9	.0	7.9
12/13	5.4	.1	5.3
12/14	.4	.3	.1
12/15	.0	.0	.0
12/16	.0	.0	.0
12/17			
12/18	.0	.0	.0
12/19	.0	.0	.0
12/20	.0	.0	.0
12/21	.6	.2	.4
12/22	.1	.0	.1
12/23	.0	.0	.0
12/24	.0	.0	.0
12/25	1.7	.0	1.7
12/26	2.0	.0	2.0
12/27	.2	.2	.0
12/28	5.0	.7	4.3
12/29	28.8	28.7	.1
12/30	.2	.1	.1
12/31	4.5	.0	4.5

TABLE IV, DAILY AVERAGES FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	SULFUR DIOXIDE(SO2)	PYRANOMETER	HYDROGEN SULFIDE
DATE / SITE	023	023	023
12/ 1	.0	241.6	
12/ 2	.3	217.2	1.4
12/ 3	1.1	147.5	.0
12/ 4	.1	138.3	.3
12/ 5	.1	73.3	.3
12/ 6	.0	82.5	.0
12/ 7	.1	152.7	.4
12/ 8	.0	218.6	.2
12/ 9	.4	220.2	.1
12/10	.1	147.6	.0
12/11	.2	219.3	.0
12/12	.0	215.2	.0
12/13	.0	217.1	.0
12/14	.0	207.0	.0
12/15	.0	206.8	.1
12/16	.0	189.9	.0
12/17	.0	213.5	.0
12/18	.0	193.4	.0
12/19	.0	212.8	.0
12/20	.0	237.9	.0
12/21	.1	215.0	.5
12/22	.2	185.6	.2
12/23	.0	141.6	.0
12/24	.0	114.8	.0
12/25	.0	215.3	.0
12/26	.0	208.6	.0
12/27	.0	204.1	.0
12/28	.0	168.6	.2
12/29	.0	201.2	4.4
12/30	.0	149.2	4.6
12/31	.0	125.0	2.1

TABLE IV. DAILY AVERAGES FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	TOTAL HYDROCARBONS	METHANE	NON-METHANE HYDROCARBONS
SITE	023	023	023
DATE			
12/ 1	1098.9	978.3	120.6
12/ 2		1013.4	
12/ 3		952.0	
12/ 4		951.9	
12/ 5		989.6	
12/ 6			
12/ 7	1405.8	1261.2	144.7
12/ 8		1164.8	
12/ 9		1140.8	
12/10		1165.8	
12/11		1156.7	
12/12		1152.4	
12/13		1137.3	
12/14	893.0	804.4	88.6
12/15	977.9	865.6	112.3
12/16	1033.1	910.6	122.5
12/17	982.6	907.4	75.2
12/18	917.6	903.9	13.7
12/19	950.2	938.6	11.6
12/20	941.7	922.8	18.9
12/21	1124.2	911.1	213.1
12/22	1123.0	923.3	199.7
12/23	1033.7	907.9	125.9
12/24	1049.7	919.6	130.2
12/25	1045.7	923.4	122.2
12/26	1018.4	915.9	102.4
12/27	1023.7	912.2	111.5
12/28	1026.6	914.4	112.2
12/29	1034.7	912.0	122.7
12/30	1054.2	911.1	143.1
12/31	1070.7	919.6	151.2

TABLE IV, DAILY AVERAGES FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	CARBON MONOXIDE	OZONE	BAROMETRIC PRESSURE
SITE DATE	023	023	023
12/ 1	454.5	87.6	798.3
12/ 2	470.6	68.8	797.0
12/ 3	721.5	51.5	791.7
12/ 4	840.3	65.6	786.4
12/ 5	561.7	58.5	786.1
12/ 6	669.0		790.7
12/ 7	964.7	66.4	791.3
12/ 8	836.2	62.5	789.3
12/ 9	546.8	60.4	784.3
12/10	495.2	60.1	792.8
12/11	500.1	68.0	794.2
12/12	531.3	62.4	795.0
12/13	459.7	72.2	793.8
12/14	390.7	72.0	792.3
12/15	304.3	69.0	795.2
12/16	260.4	70.2	795.5
12/17	227.4	68.3	789.8
12/18	231.0	68.0	788.8
12/19	244.1	61.1	792.9
12/20	253.8	65.3	795.3
12/21	274.9	73.1	790.1
12/22	256.2	72.1	790.1
12/23	293.3	73.6	787.9
12/24	258.2	64.6	784.2
12/25	493.6	64.6	792.9
12/26	718.5	65.9	794.3
12/27	383.4	67.2	787.2
12/28	244.4	70.3	791.5
12/29	174.6	68.8	785.1
12/30	131.1	62.3	780.1
12/31	177.9	70.5	780.3

```
                         TABLE IV, DAILY AVERAGES FOR DEC    1 THRU 31
          (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                 TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                 PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

        TOTAL PRECIPITATION                    PARTICULATE

    SITE   023                                023
DATE
-----------------------------------------------------------------------------------------------------
12/ 1                                          5.0
12/ 2                                          4.0
12/ 3                                          7.0
12/ 4                                          4.0
12/ 5                                          6.0
12/ 6                                          1.0
12/ 7                                          3.0
12/ 8                                          2.0
12/ 9                                          3.0
12/10                                          4.0
-----------------------------------------------------------------------------------------------------
12/11                                          1.0
12/12
12/13                                          3.0
12/14                                         17.0
12/15                                         11.0
12/16                                          4.0
12/17                                         10.0
12/18                                          2.0
12/19                                          5.0
12/20                                          4.0
-----------------------------------------------------------------------------------------------------
12/21                                          6.0
12/22                                         14.0
12/23                                          8.0
12/24                                          2.0
12/25                                          2.0
12/26                                          1.0
12/27                                         15.0
12/28                                          3.0
12/29                                          6.0
12/30                                          3.0
-----------------------------------------------------------------------------------------------------
12/31                                          7.0
```

TABLE IV, DAILY AVERAGES FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

WIND SPEED

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
12/ 1	.1	.4	.7	1.3
12/ 2	1.9	3.0	3.8	4.3
12/ 3	.9	1.3	1.5	2.3
12/ 4	2.2	2.9	3.3	4.1
12/ 5	1.7	2.7	3.4	4.5
12/ 6	1.2	2.0	2.8	3.6
12/ 7	4.1	5.7	7.5	9.6
12/ 8	5.3	7.2	9.6	12.5
12/ 9	5.6	7.4	9.1	10.7
12/10	1.8	3.0	3.6	4.3
12/11	.9	1.1	.8	.7
12/12	1.1	1.6	1.3	1.3
12/13	3.2	4.6	5.5	6.5
12/14	.1	.4	.2	.5
12/15	.9	1.1	1.4	1.3
12/16	.6	.7	.7	.8
12/17	.6	.9	.8	.5
12/18	1.9	2.7	3.0	3.4
12/19	1.4	2.0	2.7	2.9
12/20	.4	.5	.1	.1
12/21	2.2	3.2	3.5	3.8
12/22	.3	.3	.3	.6
12/23	4.6	6.2	8.2	10.1
12/24	1.9	2.6	3.2	3.8
12/25	1.7	2.7	3.7	5.0
12/26	2.9	4.3	6.3	8.4
12/27	3.5	4.8	6.1	7.5
12/28	.8	1.7	2.8	4.2
12/29	2.3	3.8	5.9	8.2
12/30	1.5	2.4	3.3	4.8
12/31	5.1	7.1	8.6	10.3

TABLE IV. DAILY AVERAGES FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

WIND DIRECTION

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
12/ 1	260.6	247.3	278.8	318.0
12/ 2	175.0	175.5	184.1	197.9
12/ 3	109.3	121.7	159.3	201.3
12/ 4	192.9	194.9	199.8	205.6
12/ 5	295.7	296.4	316.4	325.8
12/ 6	176.5	176.7	181.7	190.6
12/ 7	185.3	185.3	189.5	197.0
12/ 8	179.5	179.5	186.4	193.5
12/ 9	206.9	210.2	213.9	217.2
12/10	301.0	303.7	322.0	329.3
12/11	234.8	237.9	263.5	259.9
12/12	252.2	253.1	283.1	286.9
12/13	179.5	175.7	180.2	192.1
12/14	175.6	158.2	146.4	228.7
12/15	273.7	271.5	301.4	309.8
12/16	265.3	265.5	327.7	348.4
12/17	243.7	267.1	305.0	311.5
12/18	191.8	186.3	189.1	200.5
12/19	304.3	303.9	319.4	338.9
12/20	195.6	191.6	219.3	308.6
12/21	175.4	171.8	180.7	199.7
12/22	246.8	209.3	33.1	67.7
12/23	187.4	186.5	193.8	203.5
12/24	266.1	264.2	272.6	270.6
12/25	178.1	174.9	184.4	193.4
12/26	166.4	165.8	178.6	192.9
12/27	236.2	245.1	250.7	253.2
12/28	186.5	177.5	195.4	213.1
12/29	163.5	166.0	183.3	199.2
12/30	242.3	233.2	233.5	234.4
12/31	201.4	202.1	205.7	212.3

TABLE IV, DAILY AVERAGES FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

RELATIVE HUMIDITY

SITE 023

DATE	(6-FT)	(30-FT)	(100-FT)	(200-FT)
12/ 1	68.2	73.7	76.3	71.8
12/ 2	47.9	52.2	52.3	47.5
12/ 3	46.4	50.0	50.2	46.6
12/ 4	49.4	53.4	54.3	51.1
12/ 5	78.9	84.5	88.7	86.5
12/ 6	76.1	82.3	86.6	82.0
12/ 7	59.0		67.9	62.9
12/ 8	54.7		61.7	57.5
12/ 9	49.3		56.6	53.3
12/10	78.5		88.7	85.0
12/11	60.3		65.8	59.1
12/12	56.1		60.4	54.9
12/13	45.0		49.9	45.5
12/14	44.9		49.4	45.1
12/15	47.0		51.4	46.6
12/16	40.0		44.1	39.5
12/17	38.7		43.0	39.0
12/18	35.8		40.1	36.6
12/19	48.3		53.4	49.3
12/20	54.1		59.7	55.4
12/21	41.3		44.0	40.4
12/22	45.7		47.1	43.0
12/23	43.0		45.0	41.7
12/24	54.1		57.9	55.3
12/25	61.8		61.8	57.3
12/26	51.3		53.1	56.4
12/27	48.4		50.7	48.2
12/28	53.8		53.9	50.5
12/29	42.0		43.2	40.4
12/30	46.4		49.9	
12/31	66.8		71.1	

TABLE IV, DAILY AVERAGES FOR DEC 1 THRU 31

(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR; TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH; PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

TEMPERATURE

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
12/ 1	21.7	20.9	21.5	19.1
12/ 2	32.0	30.7	32.3	30.8
12/ 3	33.3	32.2	33.8	31.9
12/ 4	32.8	31.2	32.4	30.5
12/ 5	22.7	20.5	21.6	18.9
12/ 6	19.1	16.5	18.0	15.4
12/ 7	29.4	27.3	27.7	25.2
12/ 8	34.9	34.0	34.6	32.5
12/ 9	35.3	33.9	34.1	32.1
12/10	22.1	20.2	21.2	18.7
12/11	23.9	23.0	24.6	22.8
12/12	27.8	27.7	29.3	27.9
12/13	33.6		34.5	32.8
12/14	30.6		32.2	30.7
12/15	26.9		28.5	27.1
12/16	31.2		33.0	31.9
12/17	32.1	31.8	33.3	32.2
12/18	32.7	31.9	33.4	31.9
12/19	22.7	21.1	22.8	21.0
12/20	21.6	19.7	21.7	19.7
12/21	26.6	25.4	26.4	25.0
12/22	23.5	22.9	23.5	22.9
12/23	28.3	26.8	26.7	25.5
12/24	24.4	22.4	21.9	20.3
12/25	20.1	18.5	19.0	17.8
12/26	30.4	29.4	29.2	28.2
12/27	31.1	29.9	29.2	28.1
12/28	23.0	23.1	23.9	22.9
12/29	28.1	27.8	28.6	26.9
12/30	23.9	22.9	22.6	20.8
12/31	24.0	22.8	22.6	21.4

TABLE V

MAXIMUM FIVE-MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DECEMBER 1 THRU 31

CORPORATION

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   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC    1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
        TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
        PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              NITROGEN OXIDES(NOX)

    SITE      023
DATE
----------------------------------------------------------------------------------------------
12/ 1       134.8(11:20)
12/ 2       134.8(16:25)
12/ 3        31.8( 6:30)
12/ 4         9.4(19:20)
12/ 5         9.4( 1:25)
12/ 6         9.4(10:25)
12/ 7         7.5( 0:35)
12/ 8         5.6( 2:20)
12/ 9         5.6(21:40)
12/10         9.4(23:55)
----------------------------------------------------------------------------------------------
12/11        13.1(14:20)
12/12        13.1( 2:15)
12/13        15.0(14:10)
12/14         5.6( 0:50)
12/15         5.6( 9:55)
12/16         1.9(12:40)
12/17
12/18          .0(10:15)
12/19          .0( 0:05)
12/20          .0( 0:05)
----------------------------------------------------------------------------------------------
12/21        31.8(11:05)
12/22         5.6(10:40)
12/23          .0( 0:00)
12/24          .0( 0:00)
12/25         5.6(14:35)
12/26         5.6( 0:20)
12/27        35.6(13:10)
12/28       642.2(13:45)
12/29       325.8( 9:00)
12/30        16.9( 9:20)
----------------------------------------------------------------------------------------------
12/31        22.5( 7:20)
```

CORPORATION

```
   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
 (UNITS:CONCENTRATIONS=MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
        TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
        PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                    NITRIC OXIDE(NO)

    SITE       023
DATE
--------------------------------------------------------------------------------------
12/ 1        18,7( 2:40)
12/ 2       131,1(16:25)
12/ 3          .0( 0:00)
12/ 4         9,4(19:20)
12/ 5         9,4( 1:25)
12/ 6         9,4(10:25)
12/ 7         7,5( 0:35)
12/ 8         5,6( 2:20)
12/ 9         5,6(21:40)
12/10         7,5( 7:45)
--------------------------------------------------------------------------------------
12/11          .0( 0:00)
12/12          .0( 0:00)
12/13         5,6(20:05)
12/14         5,6( 0:50)
12/15         1,9( 9:55)
12/16          .0( 0:05)
12/17
12/18          .0(10:15)
12/19          .0( 0:05)
12/20          .0( 0:05)
--------------------------------------------------------------------------------------
12/21        20,6(12:05)
12/22          .0( 0:00)
12/23          .0( 0:00)
12/24          .0( 0:00)
12/25          .0( 0:00)
12/26          .0( 0:00)
12/27        35,6(13:10)
12/28        37,4(13:45)
12/29       325,8( 9:00)
12/30        16,9( 9:20)
--------------------------------------------------------------------------------------
12/31          .0( 0:00)
```

```
   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
       TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
       PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                   NITROGEN DIOXIDE(NO2)

    SITE     023
DATE
--------------------------------------------------------------------------------------------
12/ 1     134,8(11:20)
12/ 2      37,4( 8:40)
12/ 3      31,8( 6:30)
12/ 4        ,0( 0:00)
12/ 5       1,9(15:30)
12/ 6        ,0( 0:00)
12/ 7        ,0( 0:00)
12/ 8        ,0( 0:00)
12/ 9        ,0( 0:00)
12/10       9,4(23:55)
--------------------------------------------------------------------------------------------
12/11      13,1(14:20)
12/12      13,1( 2:15)
12/13      15,0(14:10)
12/14       3,7( 3:05)
12/15       3,7( 9:55)
12/16       1,9(12:40)
12/17
12/18        ,0(10:15)
12/19        ,0( 0:05)
12/20        ,0( 0:05)
--------------------------------------------------------------------------------------------
12/21      31,8(11:05)
12/22       5,6(10:40)
12/23        ,0( 0:00)
12/24        ,0( 0:00)
12/25       5,6(14:35)
12/26       5,6( 0:20)
12/27        ,0( 0:05)
12/28     604,7(13:45)
12/29      13,1(13:40)
12/30      11,2(21:40)
--------------------------------------------------------------------------------------------
12/31      22,5( 7:20)
```

CORPORATION

```
   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
       TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
       PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              SULFUR DIOXIDE(SO2)

    SITE      023
DATE
-------------------------------------------------------------------------------------
12/ 1           ,0( 0:00)
12/ 2          5,2(20:45)
12/ 3          5,2( 0:00)
12/ 4         28,7(10:35)
12/ 5         26,0(10:25)
12/ 6           ,0( 0:00)
12/ 7         36,5( 9:50)
12/ 8          2,6( 3:10)
12/ 9         91,2(10:45)
12/10          2,6( 1:45)
-------------------------------------------------------------------------------------
12/11          2,6( 0:15)
12/12           ,0( 0:00)
12/13           ,0( 0:00)
12/14           ,0( 0:05)
12/15           ,0( 0:05)
12/16           ,0( 0:05)
12/17           ,0( 0:00)
12/18           ,0( 0:05)
12/19           ,0( 0:05)
12/20          2,6( 3:45)
-------------------------------------------------------------------------------------
12/21          2,6(14:45)
12/22         49,5(11:05)
12/23           ,0( 0:00)
12/24           ,0( 0:00)
12/25           ,0( 0:00)
12/26           ,0( 0:00)
12/27           ,0( 0:05)
12/28           ,0( 0:00)
12/29           ,0( 0:00)
12/30           ,0( 0:00)
-------------------------------------------------------------------------------------
12/31           ,0( 0:00)
```

```
   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
      TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
      PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                PYRANOMETER

     SITE      023
DATE
------------------------------------------------------------------------------------------
12/ 1        3,60(10:15)
12/ 2        3,35(11:15)
12/ 3        3,85(12:20)
12/ 4        3,15(10:45)
12/ 5        1,95(13:50)
12/ 6        1,85(12:20)
12/ 7        3,25(12:15)
12/ 8        3,25(11:30)
12/ 9        4,75(12:10)
12/10        4,75(11:55)
------------------------------------------------------------------------------------------
12/11        3,20(10:40)
12/12        3,20(11:25)
12/13        3,25(11:30)
12/14        3,15(11:30)
12/15        3,40(11:30)
12/16        3,40(11:25)
12/17        3,20(11:40)
12/18        4,00(13:10)
12/19        3,20(11:35)
12/20        3,25(11:00)
------------------------------------------------------------------------------------------
12/21        3,25(11:45)
12/22        3,25(11:45)
12/23        3,20(13:40)
12/24        2,95(13:15)
12/25        3,15(11:40)
12/26        3,15(12:00)
12/27        3,25(11:55)
12/28        3,20(11:45)
12/29        3,40(12:30)
12/30        3,70(13:55)
------------------------------------------------------------------------------------------
12/31        3,85(13:20)
```

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   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
      TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
      PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              HYDROGEN SULFIDE

    SITE      023
DATE
------------------------------------------------------------------------------------
12/ 1        8,3(21:30)
12/ 2        6,9(16:20)
12/ 3         ,0( 0:00)
12/ 4       27,7(10:35)
12/ 5       15,2(10:25)
12/ 6        6,9(10:35)
12/ 7        9,7( 9:50)
12/ 8        2,8( 3:50)
12/ 9       19,4(10:45)
12/10         ,0( 0:00)
------------------------------------------------------------------------------------
12/11         ,0( 0:00)
12/12         ,0( 0:00)
12/13         ,0( 0:00)
12/14         ,0( 0:05)
12/15        1,4(10:40)
12/16        1,4( 2:45)
12/17         ,0( 0:00)
12/18         ,0( 0:05)
12/19         ,0( 0:05)
12/20        1,4(13:00)
------------------------------------------------------------------------------------
12/21        5,5(14:45)
12/22        9,7(11:05)
12/23         ,0( 0:00)
12/24        1,4(14:30)
12/25        1,4(12:45)
12/26        1,4( 0:20)
12/27         ,0( 0:05)
12/28        2,8(23:20)
12/29       12,5(22:40)
12/30       12,5( 3:35)
------------------------------------------------------------------------------------
12/31        5,5( 0:20)
```

CORPORATION

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   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
       TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
       PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              TOTAL HYDROCARBONS

    SITE      023
DATE
----------------------------------------------------------------------------------------
12/ 1      1757,7( 9:45)
12/ 2      3254,2(19:05)
12/ 3
12/ 4
12/ 5      1198,9(11:00)
12/ 6      3254,2(14:25)
12/ 7      1531,7( 7:55)
12/ 8      1184,6( 7:05)
12/ 9
12/10
----------------------------------------------------------------------------------------
12/11      1161.1(10:30)
12/12
12/13      1153,3( 6:30)
12/14       928,7(12:45)
12/15      1781,8(23:30)
12/16      2597,8(14:50)
12/17      1329,8( 1:30)
12/18      1148,1(10:30)
12/19      1501,1(18:00)
12/20      1736,8(16:25)
----------------------------------------------------------------------------------------
12/21      2558,0( 9:30)
12/22      3251,6(11:55)
12/23      1938,7(22:00)
12/24      1808,5( 5:55)
12/25      1490,0( 8:00)
12/26      1772,0( 0:40)
12/27      2106,1( 5:05)
12/28      1100,6(13:20)
12/29      1172,2(11:50)
12/30      1098,6( 1:00)
----------------------------------------------------------------------------------------
12/31      1561,6(17:05)
```

```
   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC    1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
        TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
        PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                        METHANE

    SITE      023
DATE
--------------------------------------------------------------------------------
12/ 1      1030,2(13:40)
12/ 2      1243,8(16:40)
12/ 3      1208,7( 0:20)
12/ 4      1449,0( 6:55)
12/ 5      1488,7( 5:55)
12/ 6      1377,4(11:25)
12/ 7      1332,4( 7:45)
12/ 8      2291,7(13:55)
12/ 9      1213,2(18:10)
12/10      1921,1(20:55)
--------------------------------------------------------------------------------
12/11      1198,9(15:15)
12/12      1198,9(13:50)
12/13      1153,3( 6:30)
12/14       842,7(12:25)
12/15       992,5(11:20)
12/16      2597,8(14:50)
12/17      1245,2(12:35)
12/18       990,5( 2:35)
12/19      1501,1(18:00)
12/20       957,3(12:55)
--------------------------------------------------------------------------------
12/21       941,7(14:55)
12/22      1656,1(23:05)
12/23       924,1(22:50)
12/24      1064,1( 4:05)
12/25      1066,7(17:40)
12/26      1772,0( 0:40)
12/27      1028,9(17:55)
12/28       967,1(15:55)
12/29       957,3(11:35)
12/30       944,3(23:05)
--------------------------------------------------------------------------------
12/31       943,0( 0:00)
```

[illegible] CORPORATION

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   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
          TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
          PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                        NON-METHANE HYDROCARBONS

     SITE      023
DATE
--------------------------------------------------------------------------------
12/ 1       761,9( 9:45)
12/ 2      2132,8(19:05)
12/ 3
12/ 4
12/ 5       190,8(11:00)
12/ 6      1923,1(14:25)
12/ 7       251,4(11:30)
12/ 8          ,0( 7:05)
12/ 9
12/10
--------------------------------------------------------------------------------
12/11          ,0(10:00)
12/12
12/13          ,0( 4:00)
12/14       119,8(20:10)
12/15       883,1(23:30)
12/16       974,9(15:20)
12/17       425,3( 1:30)
12/18       232,5(10:30)
12/19       268,3( 9:25)
12/20       816,0(16:25)
--------------------------------------------------------------------------------
12/21      1688,0(11:25)
12/22      2335,3(12:10)
12/23      1025,7(22:00)
12/24       921,5( 5:55)
12/25       577,0( 8:00)
12/26       211,6(11:20)
12/27      1207,4( 5:05)
12/28       184,3(13:20)
12/29       222,7(11:50)
12/30       195,4( 1:00)
--------------------------------------------------------------------------------
12/31       639,5(17:05)
```

CORPORATION

```
   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
  (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
          TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
          PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                      CARBON MONOXIDE

     SITE      023
DATE
--------------------------------------------------------------------------------------------------
12/ 1       5054.4( 5:50)
12/ 2       1202.3( 1:50)
12/ 3        896.9( 0:05)
12/ 4       1079.3(11:15)
12/ 5       5138.7(12:20)
12/ 6       2761.4(12:00)
12/ 7       2421.8( 3:40)
12/ 8       4519.9(16:10)
12/ 9        756.7(10:40)
12/10        639.3(17:05)
--------------------------------------------------------------------------------------------------
12/11       2337.4(15:15)
12/12       4709.0(15:35)
12/13        612.0(12:35)
12/14       2092.4(19:45)
12/15       5555.8( 2:05)
12/16       3363.1( 5:05)
12/17       2059.4(13:20)
12/18       3116.9(21:35)
12/19       4264.6(20:40)
12/20       1976.2(12:50)
--------------------------------------------------------------------------------------------------
12/21       2399.0(19:05)
12/22        590.3(21:35)
12/23       3985.4(21:40)
12/24       3205.8(14:40)
12/25       5517.1(15:25)
12/26       1798.4( 4:40)
12/27       2788.7( 3:05)
12/28        411.4(16:25)
12/29        678.1( 9:15)
12/30        183.5(19:25)
--------------------------------------------------------------------------------------------------
12/31       4748.9( 6:00)
```

```
   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC    1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
        TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
        PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                        OZONE

     SITE       023
DATE
------------------------------------------------------------------------------------------
12/ 1        99.6( 0:55)
12/ 2        87.9( 0:15)
12/ 3        72.3(12:35)
12/ 4        80.1(14:50)
12/ 5        74.2( 0:20)
12/ 6        82.1(10:40)
12/ 7        95.7( 9:00)
12/ 8        70.3( 2:55)
12/ 9        76.2(14:45)
12/10        74.2(23:30)
------------------------------------------------------------------------------------------
12/11        80.1( 4:00)
12/12        68.4( 3:10)
12/13        87.9(20:35)
12/14        84.0( 4:50)
12/15        80.1(13:10)
12/16        82.1(14:10)
12/17        74.2(23:45)
12/18        76.2( 5:45)
12/19        70.3(14:45)
12/20        78.1(23:25)
------------------------------------------------------------------------------------------
12/21        80.1( 1:10)
12/22        84.0(13:45)
12/23        82.1(11:30)
12/24        70.3( 5:55)
12/25        72.3(11:25)
12/26        72.3( 9:15)
12/27        78.1(13:55)
12/28        82.1(10:50)
12/29        74.2( 2:50)
12/30        72.3( 0:20)
------------------------------------------------------------------------------------------
12/31        82.1(15:40)
```

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   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
     TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
     PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              BAROMETRIC PRESSURE

    SITE      023
DATE
-----------------------------------------------------------------------------------------
12/ 1       800.0( 9:45)
12/ 2       801.0( 0:00)
12/ 3       795.0( 0:00)
12/ 4       791.0( 0:00)
12/ 5       789.0(20:15)
12/ 6       793.0(11:05)
12/ 7       793.0(10:05)
12/ 8       792.0( 0:00)
12/ 9       788.0(22:30)
12/10       795.0(20:20)
-----------------------------------------------------------------------------------------
12/11       796.0( 3:00)
12/12       796.0( 7:35)
12/13       796.0( 0:00)
12/14       793.0( 5:40)
12/15       798.0(23:05)
12/16       798.0( 9:20)
12/17       793.0( 0:00)
12/18       790.0( 7:05)
12/19       796.0(22:05)
12/20       798.0( 7:40)
-----------------------------------------------------------------------------------------
12/21       793.0( 0:00)
12/22       792.0(21:45)
12/23       791.0( 0:00)
12/24       788.0(22:30)
12/25       797.0(22:20)
12/26       798.0( 8:35)
12/27       790.0(21:30)
12/28       794.0(10:10)
12/29       791.0( 0:00)
12/30       781.0( 0:00)
-----------------------------------------------------------------------------------------
12/31       781.0( 0:00)
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CORPORATION

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   TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
      TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
      PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                         TOTAL PRECIPITATION

    SITE      023
DATE
--------------------------------------------------------------------------------------
12/ 1
12/ 2
12/ 3
12/ 4
12/ 5
12/ 6
12/ 7
12/ 8
12/ 9
12/10
--------------------------------------------------------------------------------------
12/11
12/12
12/13
12/14
12/15
12/16
12/17
12/18
12/19
12/20
--------------------------------------------------------------------------------------
12/21
12/22
12/23
12/24
12/25
12/26
12/27
12/28
12/29
12/30
--------------------------------------------------------------------------------------
12/31
```

CORPORATION

TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

WIND SPEED - WIND DIRECTION

SITE 023

DATE	(8-FT)		(30-FT)		(140-FT)		(200-FT)	
12/ 1	15.0	16.0(0:10)	22.0	15.0(0:10)	25.0	23.0(0:10)	26.0	22.0(0:10)
12/ 2	10.0	215.0(14:15)	13.0	189.0(14:40)	16.0	198.0(17:30)	21.0	203.0(17:30)
12/ 3	6.0	222.0(17:55)	7.0	213.0(17:30)	13.0	212.0(17:50)	15.0	215.0(17:50)
12/ 4	12.0	198.0(17:55)	16.0	201.0(17:55)	19.0	207.0(17:55)	23.0	208.0(17:55)
12/ 5	11.0	20.0(11:55)	14.0	333.0(13:25)	15.0	344.0(13:25)	16.0	344.0(13:20)
12/ 6	10.0	184.0(23:25)	13.0	188.0(23:25)	17.0	196.0(21:20)	22.0	201.0(21:20)
12/ 7	12.0	185.0(16:50)	15.0	183.0(16:50)	19.0	185.0(16:50)	22.0	190.0(16:50)
12/ 8	22.0	180.0(22:20)	26.0	180.0(21:45)	32.0	182.0(21:50)	38.0	187.0(21:50)
12/ 9	18.0	175.0(4:10)	23.0	178.0(4:10)	28.0	182.0(4:10)	34.0	187.0(4:15)
12/10	9.0	317.0(0:10)	15.0	336.0(1:05)	18.0	341.0(1:05)	21.0	342.0(1:05)
12/11	6.0	235.0(18:35)	8.0	231.0(18:35)	9.0	254.0(18:30)	9.0	261.0(18:30)
12/12	6.0	306.0(15:40)	7.0	293.0(15:35)	8.0	264.0(1:30)	9.0	254.0(1:30)
12/13	13.0	195.0(10:40)	15.0	192.0(10:50)	17.0	193.0(10:45)	18.0	198.0(10:40)
12/14	5.0	248.0(15:00)	9.0	200.0(0:05)	13.0	199.0(0:05)	16.0	209.0(0:05)
12/15	8.0	316.0(12:30)	11.0	320.0(12:35)	11.0	322.0(12:30)	12.0	324.0(12:50)
12/16	6.0	235.0(17:50)	8.0	210.0(0:05)	8.0	260.0(17:30)	40.0	69.0(9:50)
12/17	4.0	222.0(5:55)	7.0	215.0(5:55)	4.0	315.0(11:30)	6.0	114.0(22:45)
12/18	8.0	202.0(10:55)	10.0	206.0(11:05)	12.0	225.0(14:20)	14.0	200.0(1:45)
12/19	10.0	5.0(15:10)	14.0	23.0(14:40)	16.0	11.0(15:10)	16.0	12.0(15:10)
12/20	5.0	22.0(12:35)	7.0	163.0(20:55)	6.0	295.0(16:55)	6.0	3.0(14:05)
12/21	8.0	225.0(11:45)	10.0	222.0(11:45)	11.0	211.0(17:45)	15.0	222.0(17:50)
12/22	7.0	360.0(13:00)	9.0	352.0(13:00)	10.0	354.0(13:00)	10.0	20.0(13:20)
12/23	15.0	189.0(23:05)	19.0	198.0(20:50)	24.0	202.0(20:50)	29.0	208.0(20:50)
12/24	12.0	196.0(0:15)	16.0	194.0(0:20)	19.0	196.0(0:20)	22.0	202.0(0:15)
12/25	10.0	180.0(21:55)	14.0	170.0(22:00)	17.0	180.0(21:50)	22.0	186.0(21:55)
12/26	13.0	193.0(15:55)	17.0	214.0(15:25)	19.0	215.0(15:25)	21.0	202.0(15:55)
12/27	21.0	290.0(12:50)	27.0	288.0(12:50)	33.0	293.0(12:50)	32.0	290.0(12:50)
12/28	9.0	219.0(16:05)	10.0	205.0(15:55)	12.0	209.0(15:55)	15.0	206.0(17:15)
12/29	11.0	230.0(16:40)	15.0	200.0(16:55)	20.0	201.0(17:20)	24.0	236.0(17:10)
12/30	10.0	297.0(11:45)	13.0	321.0(14:00)	16.0	201.0(4:20)	20.0	209.0(4:20)
12/31	15.0	209.0(13:20)	19.0	214.0(15:40)	23.0	215.0(15:40)	23.0	218.0(13:40)

CORPORATION

```
      TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
     (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
           TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
           PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                       RELATIVE HUMIDITY

    SITE 023
 DATE      (  8-FT)                 ( 30-FT)                  (100-FT)                 (200-FT)
------------------------------------------------------------------------------------------------
12/ 1      86,0( 0:00)              95,0( 0:00)              100,0( 0:00)             100,0( 0:00)
12/ 2      58,0( 4:00)              60,0( 4:10)               59,0( 1:30)              52,0( 3:55)
12/ 3      51,0( 0:00)              54,0( 0:00)               54,0( 0:00)              50,0(23:25)
12/ 4      59,0( 5:30)              62,0(23:55)               64,0(22:55)              62,0(22:40)
12/ 5      90,0( 8:10)              97,0( 8:25)              100,0( 7:35)             100,0( 7:40)
12/ 6      89,0( 6:25)              95,0( 6:15)              100,0( 6:10)              99,0( 6:45)
12/ 7      67,0( 7:20)              72,0( 7:00)               75,0( 7:40)              69,0( 7:05)
12/ 8      65,0( 7:30)                                        68,0( 0:20)              64,0( 0:25)
12/ 9      88,0(23:15)                                       100,0(23:15)             100,0(23:05)
12/10      90,0( 2:30)                                       100,0( 0:00)             100,0( 3:45)
------------------------------------------------------------------------------------------------
12/11      77,0( 0:05)                                        76,0( 0:00)              70,0( 8:15)
12/12      71,0( 6:50)                                        72,0( 5:45)              66,0( 1:55)
12/13      56,0( 2:50)                                        58,0( 2:05)              52,0( 1:50)
12/14      56,0( 7:50)                                        57,0( 7:20)              52,0( 8:25)
12/15      57,0( 6:55)                                        59,0( 7:30)              53,0( 6:40)
12/16      49,0( 0:15)                                        52,0( 7:05)              47,0( 7:05)
12/17      47,0( 4:15)                                        49,0( 6:35)              43,0( 0:05)
12/18      42,0(23:30)                                        46,0(23:20)              41,0(23:25)
12/19      69,0(22:30)                                        71,0(23:40)              68,0(23:35)
12/20      79,0( 7:45)                                        81,0( 6:50)              75,0( 6:15)
------------------------------------------------------------------------------------------------
12/21      51,0(22:05)              45,0(23:05)               51,0(23:20)              46,0(22:35)
12/22      52,0( 5:05)              45,0( 7:35)               51,0( 6:35)              47,0(21:30)
12/23      49,0( 0:00)              41,0( 0:00)               48,0( 0:00)              44,0( 0:00)
12/24      81,0(22:05)              74,0(19:35)               82,0(19:20)              80,0(19:20)
12/25      84,0( 1:00)              75,0( 0:45)               82,0( 1:20)              77,0( 2:05)
12/26      57,0( 7:00)              50,0( 6:45)               58,0( 7:05)              54,0( 6:45)
12/27      58,0(23:45)              48,0( 0:05)               59,0(23:40)              56,0(23:45)
12/28      67,0( 7:20)                                        65,0( 4:30)              61,0( 4:10)
12/29      52,0( 8:05)                                        50,0( 0:55)              45,0( 0:00)
12/30      60,0(23:35)                                        67,0(22:50)
------------------------------------------------------------------------------------------------
12/31      74,0(23:50)                                        79,0(21:05)
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             TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR DEC   1 THRU 31
          (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                 TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                 PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                          TEMPERATURE

   SITE 023
 DATE       (  8-FT)                ( 30-FT)                (100-FT)                (200-FT)
------------------------------------------------------------------------------------------------
12/ 1        33.0(14:35)             30.0(14:15)             29.0(14:35)             26.0(14:50)
12/ 2        46.0(13:25)             43.0(12:45)             42.0(12:45)             40.0(13:15)
12/ 3        45.0(12:40)             42.0(13:15)             41.0(13:00)             39.0(13:30)
12/ 4        44.0(12:00)             40.0(12:10)             39.0(11:35)             37.0(12:10)
12/ 5        34.0( 0:20)             31.0( 0:20)             32.0( 0:10)             30.0( 0:25)
12/ 6        27.0(12:20)             24.0(15:30)             24.0(15:30)             21.0(15:30)
12/ 7        39.0(13:25)             34.0(12:50)             34.0(13:00)             31.0(12:50)
12/ 8        47.0(14:35)             43.0(13:40)             43.0(14:50)             41.0(14:20)
12/ 9        48.0(13:05)             44.0(13:00)             43.0(13:00)             42.0(13:15)
12/10        31.0(14:05)             27.0(15:05)             26.0(13:55)             23.0(14:00)
------------------------------------------------------------------------------------------------
12/11        40.0(14:30)             37.0(14:15)             37.0(15:15)             34.0(14:45)
12/12        43.0(13:05)             41.0(14:50)             40.0(14:10)             38.0(14:40)
12/13        46.0(11:40)             40.0(10:25)             42.0(13:25)             40.0(13:30)
12/14        43.0(13:20)                                     40.0(13:25)             38.0(13:55)
12/15        41.0(13:45)                                     37.0(14:25)             34.0(14:15)
12/16        48.0(14:00)             46.0(14:00)             45.0(13:45)             43.0(14:00)
12/17        49.0(14:30)             46.0(15:15)             45.0(15:15)             43.0(15:15)
12/18        46.0(12:10)             42.0(12:10)             42.0(13:25)             39.0(12:40)
12/19        35.0(14:25)             30.0(15:00)             30.0(15:00)             27.0( 1:20)
12/20        35.0(14:50)             32.0(14:40)             32.0(14:50)             29.0(14:45)
------------------------------------------------------------------------------------------------
12/21        40.0(13:00)             36.0(13:25)             35.0(14:25)             33.0(13:50)
12/22        37.0(12:50)             34.0(12:00)             32.0(12:00)             30.0(12:00)
12/23        38.0(12:45)             35.0(14:55)             33.0(13:35)             31.0(12:45)
12/24        32.0( 4:50)             28.0( 0:00)             27.0( 0:00)             26.0( 0:00)
12/25        33.0(13:50)             30.0(13:40)             28.0(13:35)             27.0(14:00)
12/26        44.0(15:05)             41.0(13:20)             39.0(13:10)             38.0(13:30)
12/27        42.0(12:25)             38.0(11:00)             36.0(11:00)             36.0(12:00)
12/28        38.0(13:30)             36.0(13:35)             34.0(13:35)             32.0(13:20)
12/29        43.0(14:30)             39.0(14:00)             39.0(14:25)             36.0(14:05)
12/30        33.0( 9:50)             31.0(11:10)             30.0(11:10)             28.0(11:10)
------------------------------------------------------------------------------------------------
12/31        33.0(13:25)             29.0(13:20)             27.0(13:05)             26.0(13:20)
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TABLE VI
THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DECEMBER 1 THRU 31

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TABLE VI, THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC    1-31
            (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                 UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                      WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                             NITROGEN OXIDES[WS: WD]
                                1-HOUR
SITE            023

 1,12/29( 6:00- 7:00) 202,2[ 3:129]
 2,12/29( 8:00- 9:00) 195,0[ 4: 91]
 3,12/ 1(10:20-11:20)  84,6[ 2:116]
 4,12/28(12:45-13:45)  60,8[ 4:208]
 5,12/ 3( 6:05- 7:05)  27,1[ 3:107]
---------------------------------------------------------------------------------------------------

                              NITRIC OXIDE[WS: WD]
                                1-HOUR
SITE            023

 1,12/29( 6:00- 7:00) 202,2[ 3:129]
 2,12/29( 8:00- 9:00) 195,0[ 4: 91]
 3,12/ 2( 8:55- 9:55)  10,6[ 3: 86]
 4,12/ 1( 4:00- 5:00)   9,4[ 7:287]
 5,12/28(12:45-13:45)   7,0[ 4:208]
---------------------------------------------------------------------------------------------------

                             NITROGEN DIOXIDE[WS: WD]
                                1-HOUR
SITE            023

 1.12/ 1(10:20-11:20)  84,6[ 2:116]
 2,12/28(12:45-13:45)  53,8[ 4:208]
 3,12/ 3( 6:05- 7:05)  27,1[ 3:107]
 4,12/ 3( 7:10- 8:10)  24,3[ 3:117]
 5,12/ 3( 8:15- 9:15)  21,8[ 2: 75]
---------------------------------------------------------------------------------------------------
```

```
         TABLE VI, THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC   1-31
                   (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
               UNITS: CONCENTRATIONS=MICROGRAMS PER CUBIC METER: WIND SPEED=MILES PER HOUR:
                      WIND DIRECTION=DEGREES WITH RESPECT TO THE NORTH

                                 SULFUR DIOXIDE[WS: WD]
                                   1-HOUR
SITE              023

 1,12/ 9(10:40-11:40)   7,8[15:205]
 2,12/22(10:50-11:50)   4,1[ 3:121]
 3,12/ 2(23:50- 0:50)   3,3[ 4:103]
 4,12/ 7( 9:35-10:35)   3,0[ 3:184]
 5,12/ 3( 1:50- 2:50)   2,8[ 4:131]
----------------------------------------------------------------------------------------------

                                 SULFUR DIOXIDE[WS: WD]
                                  24-HOUR
SITE              023

 1,12/ 2-12/ 3(12:00)   1,4[ 5:132]
 2,12/ 9-12/10( 9:00)    ,4[ 8:266]
 3,12/21-12/22(14:00)    ,3[ 3:185]
 4,12/10-12/11(12:00)    ,2[ 2:230]
 5,12/ 4-12/ 5(22:00)    ,1[ 4:272]
----------------------------------------------------------------------------------------------

                                HYDROGEN SULFIDE[WS: WD]
                                   1-HOUR
SITE              023

 1,12/30( 2:45- 3:45)  11,2[ 4:119]
 2,12/29(22:35-23:35)  11,1[ 3:127]
 3,12/29(23:45- 0:45)  11,1[ 3:128]
 4,12/30( 6:55- 7:55)  11,0[ 4:182]
 5,12/30( 3:50- 4:50)  10,7[ 9:194]
----------------------------------------------------------------------------------------------
```

```
                    TABLE VI, THE FIVE MAXIMUM AVERAGES FOR DEC   1-31
                              (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                   UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                              WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                        TOTAL HYDROCARBONS(WS: WD)
                                            3-HOUR(6-9AM)
SITE             023

 1,12/21( 6:00- 9:00)1186,9[ 4:112]
 2,12/24( 6:00- 9:00)1091,5[ 4:261]
 3,12/31( 6:00- 9:00)1073,0[ 4:188]
 4,12/30( 6:00- 9:00)1044,4[ 4:168]
 5,12/23( 6:00- 9:00)1036,3[ 3:101]
   PRIMARY STANDARD EXCEEDED  14 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED  14 TIMES AT SITE 023
------------------------------------------------------------------------------------------------------
```

```
                              TABLE VI, THE FIVE MAXIMUM AVERAGES FOR DEC    1-31
                                     (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                            UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                   WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                                 METHANE(WS: WD)
                                                   3-HOUR(6-9AM)
SITE                 023

 1,12/10( 6:00- 9:00)1159,2( 3:259)
 2,12/ 9( 6:00- 9:00)1145,0( 5:117)
 3,12/11( 6:00- 9:00)1144,0( 1:181)
 4,12/12( 6:00- 9:00)1143,0( 2:210)
 5,12/13( 6:00- 9:00)1141,0( 4:147)
   PRIMARY STANDARD EXCEEDED  22 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED  22 TIMES AT SITE 023
-----------------------------------------------------------------------------------------------------------
```

```
                              TABLE VT, THE FIVE MAXIMUM AVERAGES FOR DEC    1-31
                                     (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                             UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                    WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                         NON-METHANE HYDROCARBONS(WS: WD)
                                                 3-HOUR(6-9AM)
SITE                023

 1,12/21( 6:00- 9:00) 272,9[ 4:112]
 2,12/31( 6:00- 9:00) 154,8[ 4:186]
 3,12/24( 6:00- 9:00) 144,9[ 4:261]
 4,12/30( 6:00- 9:00) 141,0[ 4:168]
 5,12/23( 6:00- 9:00) 123,9[ 3:101]
   PRIMARY STANDARD EXCEEDED    9 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED    9 TIMES AT SITE 023
---------------------------------------------------------------------------------------------------------------------
```

```
        TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC    1-31
                     (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                          WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                         CARBON MONOXIDE(WS: WD)
                                            1-HOUR
SITE              023

 1,12/ 8( 5:40- 6:40)1215.4( 1: 65)
 2,12/ 8(13:00-14:00)1190.4(14:188)
 3,12/25( 8:10- 9:10)1180.6( 2:111)
 4,12/ 8(15:20-16:20)1108.8(12:201)
 5,12/ 7( 2:40- 3:40)1092.8( 6:172)
----------------------------------------------------------------------------------------------------
```

```
        TABLE VI, THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC    1-31
                    (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
              UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                   WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                              CARBON MONOXIDE[WS: WD]
                                 8-HOUR
SITE           023

 1.12/ 6(21:55- 5:55)1005,4[ 7:152]
 2,12/ 8( 5:55-13:55) 967,8[ 8:155]
 3,12/ 7( 7:55-15:55) 967,6( 6:190]
 4,12/ 4(10:55-18:55) 892,4[ 7:203]
 5,12/ 2(20:55- 4:55) 842,8[ 3:117]
--------------------------------------------------------------------------------
```

```
TABLE VI, THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC   1-31
         (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
      UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
             WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                            OZONE(WS: WD)
                              1-HOUR
SITE            023

 1,12/ 1( 0:15- 1:15)  97,0[10:358]
 2,12/ 1( 1:45- 2:45)  94,3[ 4:275]
 3,12/ 1(14:15-15:15)  93,9[ 2: 17]
 4,12/ 1( 3:25- 4:25)  91,3[ 7:285]
 5,12/ 1(10:20-11:20)  90,4[ 2:116]
---------------------------------------------------------------------------------
```

```
                    TABLE VI, THE FIVE MAXIMUM AVERAGES FOR DEC   1-31
                   UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER

                                      PARTICULATE
                                        24-HOUR

SITE                 023

           1    12/14     17.0
           2    12/27     15.0
           3    12/22     14.0
           4    12/15     11.0
           5    12/17     10.0
------------------------------------------------------------------------------------------
```

TABLE VII
FUNCTIONAL DEPENDENCE OF RECORDED PARAMETERS UPON WIND DIRECTION

```
                         NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

          NITROGEN OXIDES(NOX)                                           C-B SHALE OIL PROJECT
                                TRAILER NO. =  23  PERIOD(12/ 1/76 TO 12/31/76)

                                                            WIND DIRECTION
                 N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
CONCENTRATION
  UG/M**3
  GT    160 :                 4    3    6    2    5         1                                     :    21
140 -   160 :            1    0    1    0    0    1         0                                     :     3
120 -   140 :            0    0    0    0    0    1         1                                     :     2
110 -   120 :            0    0    0    3    2    1         0                                     :     6
100 -   110 :            1    0    2    0    0    0         0                                     :     3
 90 -   100 :            0    0    0    0    0    0         0                                     :     0
 80 -    90 :            0    0    0    0    0    0         0                                     :     0
 70 -    80 :            0    0    0    0    0    0         0                                     :     0
 60 -    70 :            0    0    0    0    0    0         0                                     :     0
 50 -    60 :            0    0    0    0    0    0    1    0                                     :     1
 40 -    50 :            0    0    0    1    0    0    0    0                                     :     1
 30 -    40 :            0    1    2    0    0    0    1    0                   1                 :     5
 20 -    30 :            4   11   20    7   10    0    2    5    1    1         1                 :    62
 10 -    20 :  3    1   10   10   25   15   11   15   22   35   20    5    4   10    8    1   11 :   206
  LT     10 :230  158  143  239  390  449  467  500  933 1302  716  260  261  393  286  198  323 :  7248
  TOTAL     :233  159  159  265  443  481  492  523  959 1344  737  266  265  405  294  199  334 :  7558
            ...........................................................................................
              0.   0.   4.   6.   6.   6.   4.   4.   1.   2.   2.   2.   2.   2.   2.   1.   2.      3.
```

CORPORATION

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

NITRIC OXIDE(NO) C-B SHALE OIL PROJECT

TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
GT 160				4	3	6	2	5										20
140 - 160			1	0	1	0	0	1										3
120 - 140			0	0	0	0	0	0		1								1
110 - 120			0	0	0	1	0	0		0								1
100 - 110			1	0	0	0	0	0		0								1
90 - 100			0	0	0	0	0	0		0								0
80 - 90			0	0	0	0	0	0		0								0
70 - 80			0	0	0	0	0	0		0								0
60 - 70			0	0	0	0	0	0		0								0
50 - 60			0	0	0	0	0	0		0								0
40 - 50			0	0	0	0	0	0		0								0
30 - 40			0	0	0	0	0	0		1				1				2
20 - 30			0	1	0	1	0	0	1	2		1		1				7
10 - 20	1	1	2	2	3	1	0	0	1	5	1	0	2	5	1	1		26
LT 10	232	158	155	258	436	472	490	517	957	1335	736	265	263	398	293	198	334	7497
TOTAL	233	159	159	265	443	481	492	523	959	1344	737	266	265	405	294	199	334	7558
[illegible]	0.	0.	2.	4.	3.	3.	1.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.

```
                  NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

        NITROGEN DIOXIDE(NO2)                                        C-B SHALE OIL PROJECT
                             TRAILER NO. -  23  PERIOD(12/ 1/76 TO 12/31/76)

                                                        WIND DIRECTION
                   N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
CONCENTRATION
  UG/M**3
  GT    160 :                                                 1                                    :     1

140 -   160 :                                                 0                                    :     0

120 -   140 :                                          1      0                                    :     1

110 -   120 :                              2    2      1      0                                    :     5

100 -   110 :                         2    0    0      0      0                                    :     2

 90 -   100 :                         0    0    0      0      0                                    :     0

 80 -    90 :                         0    0    0      0      0                                    :     0

 70 -    80 :                         0    0    0      0      0                                    :     0

 60 -    70 :                         0    0    0      0      0                                    :     0

 50 -    60 :                         0    0    0      0      0                                    :     0

 40 -    50 :                         0    1    0      0      0                                    :     1

 30 -    40 :                    1    2    0    0      0    1    0                                 :     4

 20 -    30 :               4    9   19    6   10      0    3    3    1                            :    55

 10 -    20 :    2          7    9   21   12   11     15   21   30   19    5    2    5    7      10 :   176

  LT     10 :  231  159  148  246  399  460  469    506  934 1310  717  261  263  400  287  199  324 :  7313

  TOTAL     :  233  159  159  265  443  481  492    523  959 1344  737  266  265  405  294  199  334 :  7558
             ...........................................................................................

  MEAN          0.   0.   2.   3.   4.   3.   3.    2.   1.   2.   2.   1.   0.   0.   1.   0.   2.      2.
```

CORPORATION

```
                        NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

          SULFUR DIOXIDE(SO2)                                       C-B SHALE OIL PROJECT
                                TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                             WIND DIRECTION
                   N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  CALM   TOTAL
CONCENTRATION
  UG/M**3
  GT     140 :                                                                                                       :
130 -    140 :                                                                                                       :
120 -    130 :                                                                                                       :
110 -    120 :                                                                                                       :
100 -    110 :                                                                                                       :
 90 -    100 :                                                 1                                                     :     1
 80 -     90 :                                                 0                                                     :     0
 70 -     80 :                                                 0                                                     :     0
 60 -     70 :                                                 0                                                     :     0
 50 -     60 :                                                 0                                                     :     0
 40 -     50 :                                                 0                                                     :     0
 30 -     40 :                                           1     0                                                     :     1
 20 -     30 :           1                               0     0                                   1                 :     2
 10 -     20 :           0                               0     0                                   0                 :     0
  LT      10 :   251   172   172   299   488   546   544   583   999  1468   822   310   299   472   333   223   412 :  8393
  TOTAL      :   251   173   172   299   488   546   544   584  1000  1468   822   310   299   472   334   223   412 :  8397
             ..........................................................................................................
  MEAN          0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.      0.
```

```
                         NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

             HYDROGEN SULFIDE(H2S)                                        C-B SHALE OIL PROJECT
                                TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                              WIND DIRECTION
                  N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM  TOTAL
 CONCENTRATION
   UG/M**3
    GT    140 :                                                                                    :

 130 -    140 :                                                                                    :

 120 -    130 :                                                                                    :

 110 -    120 :                                                                                    :

 100 -    110 :                                                                                    :

  90 -    100 :                                                                                    :

  80 -     90 :                                                                                    :

  70 -     80 :                                                                                    :

  60 -     70 :                                                                                    :

  50 -     60 :                                                                                    :

  40 -     50 :                                                                                    :

  30 -     40 :                                                                                    :

  20 -     30 :         1                                                                          :     1

  10 -     20 :         0         1    8   19   22    7   25   10                   1              :    93

    LT     10 :  241  171  166  298  460  500  500  566  964 1451  817  309  297  470  330  225  410 :  8175

     TOTAL    :  241  172  166  299  468  519  522  573  989 1461  817  309  297  470  331  225  410 :  8269
              ..........................................................................................

      MEAN        0.   0.   0.   0.   0.   1.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.     0.
```

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

TOTAL HYDROCARBONS C-B SHALE OIL PROJECT

TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
GT 4000																		
3600 - 4000																		
3400 - 3600																		
3200 - 3400	1		1	2			1							1	2			8
3000 - 3200	0		0	0	1	2	0			5				0	0			8
2800 - 3000	1		0	0	2	0	1		2	1				0	0			7
2600 - 2800	0		1	1	0	0	0		0	0				0	0	1		3
2400 - 2600	0	1	1	0	0	2	0		0	1				0	0	1		6
2200 - 2400	0	0	0	0	2	2	1		0	6				0	0	0		11
2000 - 2200	0	0	0	0	1	0	0		0	4				0	0	0		5
1800 - 2000	0	0	0	0	2	1	0	1	3	5				1	1	1		15
1600 - 1800	2	1	0	1	3	6	0	1	0	3			3	2	1	1	1	25
LT 1600	177	124	117	179	302	335	358	388	578	952	482	178	156	252	173	127	270	5148
TOTAL	181	126	120	183	313	348	361	390	583	977	482	178	159	256	177	131	271	5236
MEAN/100	11.	10.	11.	11.	11.	11.	10.	10.	11.	11.	10.	10.	10.	10.	11.	11.	10.	11.

CORPORATION

```
                         NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

           METHANE(CH4)                                              C-B SHALE OIL PROJECT
                                  TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                        WIND DIRECTION
                    N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
CONCENTRATION
  UG/M**3
  GT  2400 :                                                                                1       :    1

2200 - 2400 :                                             1                                 0       :    1

2000 - 2200 :                                             1                                 0       :    1

1800 - 2000 :                                             0                            1    0       :    1

1600 - 1800 :                           1                 0                            0    0    1  :    2

1400 - 1600 :       2                   1         1       0                            2    0    1  :    7

1200 - 1400 :       3        14   11   24   13   10   37  102   46   14    1    2    7    3    4    1  :  292

1000 - 1200 :      32   25   17   37   42   69   94   96  221  203  211   76   87  125  108   53   73  : 1569

 800 - 1000 :     189  131  118  204  346  392  363  366  531  999  491  188  188  271  176  124  275  : 5352

 600 -  800 :       0    4    5    2    4    1    9    7    2    5   18   15    4    2    2    8   14  :  102

 400 -  600 :       0    0    0    0    1    0    0    0    0    1    0    0    0    0    0    0    0  :    2

 200 -  400 :       0    0    0    0    0    0    0    0    1    0    0    0    0    0    0    0    0  :    1

  LT  200 :         0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0    0  :    0

   TOTAL    :     226  160  154  254  417  477  476  507  859 1254  734  280  281  405  292  190  365  : 7331
            ..........................................................................................

 MEAN/100          10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.  10.
```

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

NON-METHANE HYDROCARBONS C-B SHALE OIL PROJECT
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
GT 3000																		
2800 - 3000																		
2600 - 2800																		
2400 - 2600																		
2200 - 2400	1														2			3
2000 - 2200	1			2	1										0			4
1800 - 2000	0		1	0	1	2	1			6				1	0			12
1600 - 1800	0		0	1	1	1	1		3	0				0	0			7
1400 - 1600	0		2	0	1	3	0		0	3				0	0			9
1200 - 1400	0	1	0	0	1	0	1		0	3				0	0	1		7
1000 - 1200	0	0	0	0	1	1	0	1	1	5				0	0	0		9
800 - 1000	0	1	0	0	4	1	0	0	1	6			2	1	2	1		19
600 - 800	1	1	0	1	2	4	0	1	0	1	1		1	1	0	2		16
LT 600	178	123	117	179	301	336	358	388	578	953	481	178	156	253	173	127	271	5150
TOTAL	181	126	120	183	313	348	361	390	583	977	482	178	159	256	177	131	271	5236
MEAN	129.	101.	140.	146.	155.	146.	97.	94.	114.	135.	90.	85.	101.	97.	130.	132.	82.	117.

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

CARBON MONOXIDE(CO) C-8 SHALE OIL PROJECT
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

CONCENTRATION UG/M**3	WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
GT 4250					1	1	1		2	1	2	1		2		1		12
3750 - 4000					2	0	0		0	1	0	0		0		1		4
3500 - 3750				1	0	0	0		0	1	0	0		0		0		2
3250 - 3500				0	0	0	0		1	1	1	0		0		0		3
3000 - 3250				0	0	0	1		0	1	0	0		0		0		2
2750 - 3000				0	0	0	1	2	1	2	0	0		1		0		7
2500 - 2750				0	0	2	0	0	1	0	0	0		0		1		4
2250 - 2500				0	0	1	0	0	0	0	2	0		0		0	1	4
2000 - 2250				0	0	1	0	1	1	1	1	0		0	1	0	1	7
1750 - 2000			1	0	0	1	0	0	2	0	0	0		1	0	0	0	5
1500 - 1750			1	0	0	0	1	0	0	1	0	1	1	0	0	0	0	5
1250 - 1500			1	0	1	0	0	1	0	1	0	1	0	0	0	0	2	7
LT 1250	250	174	168	282	449	499	496	551	977	1372	780	291	294	423	310	215	398	7929
TOTAL	250	174	171	283	453	505	500	555	985	1382	786	294	295	427	311	218	402	7991
[illegible]	349.	363.	481.	511.	515.	450.	415.	437.	530.	424.	432.	397.	406.	409.	369.	426.	340.	433.

```
                        NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

          OZONE(O3)                                                                C-B SHALE OIL PROJECT
                                    TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                                 WIND DIRECTION
                     N   NNE    NE   ENE     E   ESE    SE   SSE     S  SSW    SW   WSW     W   WNW    NW   NNW CALM  TOTAL
CONCENTRATION
  UG/M**3
  GT     240 :                                                                                                :
220 -    240 :                                                                                                :
200 -    220 :                                                                                                :
180 -    200 :                                                                                                :
160 -    180 :                                                                                                :
140 -    160 :                                                                                                :
120 -    140 :                                                                                                :
100 -    120 :                                                                                                :
 80 -    100 :  30    16    17    16    37    43    48    34    56   84    21     6    18    26    12    13    14 :   491
 60 -     80 : 191   131   114   213   326   391   397   469   778 1224   624   231   171   296   249   176   335 :  6316
 40 -     60 :  29    31    38    60   102   105    89    49    94  138   179    76   113   149    72    32    68 :  1424
 20 -     40 :   0     0     0     0     0     0     0     0     1    1     0     0     0     0     0     0     0 :     2
   LT     20 :   0     0     0     0     0     0     0     0     0    0     0     0     0     0     1     0     1 :     2
   TOTAL     : 250   178   169   289   465   539   534   552   929 1447   824   313   302   471   334   221   418 :  8235
             ...........................................................................................................
    MEAN       69.   68.   66.   65.   66.   67.   68.   68.   67.  68.   65.   65.   63.   64.   65.   67.   65.   67.
```

TABLE VIII

DIURNAL VARIATION OF VARIOUS RECORDED PARAMETERS

CORPORATION

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                       DIURNAL VARIATION OF NITROGEN OXIDES(UG/M**3)
                         TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                       HOUR
       1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   MEAN
DAY

 1                    *!   *    *                        35     !   *!   *    *         *     !    !    !    !    !   *    9       8.
 2    16   12    *    *    *    *    *    *!  23!  15   17     !    !    !    !    !  26!   *    *    *    *    *    *    *       7.
 3     *    *    *    *    *    9   26   25   22   18   19     !   *    *    *    *    *    *    *    *    *    *    *    *       6.
 4     *    *    *    *    *    *    *    *    *    *    *!   *    *    *    *    *    *    *    *    *    *    *    *    *       2.
 5     *    *    *    *    *    *    *    *    *    *!   *!   *    *    *    *    *    *    *    *    *    *    *    *    *       2.
 6     *    *    *    *    *    *    *    *    *    *!   *!   *    *    *    *    *    *    *    *    *    *    *    *    *       1.
 7     *    *    *    *    *    *    *    *    *    *!   *    *    *    *    *    *    *    *    *    *    *    *    *    *       1.
 8     *    *    *    *    *    *    *    *    *    *!   *    *    *    *    *    *    *    *    *    *    *    *    *    *       0.
 9     *    *    *    *    *    *    *    *    *    *    *!   *    *    *    *    *    *    *    *    *    *    *    *    *       0.
10     *    *    *    *    *    *    *    *    *    *    *!   *!   *    *    *    *    *    *    *    *    *    *    *    *       2.
11     *    *    *    *    *    *    *    *    *    *    *     !    !    !    9!   *    *    *    *    *    *    *    *    *       6.
12     *    *    *    *    *    *    *    *    *    *    *    *    *    9    *    *    *    *    *    *    *    *    *    *       8.
13     *    *    *    *    *    *    *    9    *    *    *    *    9    9   10    *!   *    *    *    *    *    *    *    *       5.
14     *    *    *    *    *    *    *    *    *    *!    !   *    *    *    *    *    *    *    *    *    *    *    *    *       0.
15     *    *    *    *    *    *    *    *    *     !   *    *    *    *    *    *    *    *    *    *    *    *    *    *        .
16     *    *    *    *    *    *    *    *    *    *    *!   *    *    *    *!                                                    .
17                                                                                                                              .
18                                                  !   *!   *    *    *    *    *    *    *    *    *    *    *    *    *       0.
19     *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *       0.
20     *    *    *    *    *    *    *    *    *!   *!   *    *    *    *    *    *    *    *    *    *    *    *    *    *       0.
21     *    *    *    *    *    *    *    *    *    *    *!   *!             *    *    *    *    *    *    *    *    *    *       1.
22     *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *        .
23     *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *       0.
24     *    *    *    *    *    *    *    *    *    *!   *!   *    *    *    *    *    *    *    *    *    *    *    *    *       0.
25     *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *       2.
26     *    *    *    *    *    *    *    *    *    *    *!   *!   *    *    *    *    *    *    *    *    *    *    *    *       2.
27     *    *    *    *    *    *    *    *    *    *    *    *    *    *    *!    !   *!   *    *    *    *    *    *    *       0.
28     *    *    *    *    *    *    *    *    *!    !   *    *    *   72     !                                                   5.
29                               200       183             *    *    *    *!    !   *!   *    *    *    *    *    *    *    *      26.
30     *    *    *    *    *    *    *    *    *    *!   *    *    *    *    *    *    *    *    *    *    *    *    *    *       0.
31     *    *    *    *    *    *   11   12    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *       5.
MEAN   2.   2.   1.   2.   2.   2.  10.   3.   9.   3.   4.   2.   1.   4.   1.   1.   2.   1.   1.   1.   1.   1.   2.   2.

                        TOTAL NUMBER OF OBSERVATIONS =  7662    MEAN  =       3.

             * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

             ! INDICATES CALIBRATION DURING THE HOUR
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```
                  DIURNAL VARIATION OF NITRIC OXIDE(UG/M**3)
                TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                      HOUR
      1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  MEAN
DAY

  1                  *:   *    *                        *     :   *:   *    *         *     :    :    :    :    :   *    *    2.
  2   *    *    *    *    *    *    *    *:   *:  10   15      :    :    :    :    :  25:   *    *    *    *    *    *    *    3.
  3   *    *    *    *    *    *    *    *    *    *    *     :   *    *    *    *    *    *    *    *    *    *    *    *    0.
  4   *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    2.
  5   *    *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *    *    *    *    *    *    2.
  6   *    *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *    *    *    *    *    *    1.
  7   *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    *    1.
  8   *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
  9   *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 10   *    *    *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *    *    *    *    *    0.
 11   *    *    *    *    *    *    *    *    *    *    *     :    :    :   *:   *    *    *    *    *    *    *    *    *    0.
 12   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 13   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    0.
 14   *    *    *    *    *    *    *    *    *    *:    :   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 15   *    *    *    *    *    *    *    *    *     :   *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 16   *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *:                                                0.
 17
 18                                                 :   *:   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 19   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 20   *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 21   *    *    *    *    *    *    *    *    *    *    *:   *:             *    *    *    *    *    *    *    *    *    *    0.
 22   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 23   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 24   *    *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 25   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 26   *    *    *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *    *    *    *    *    0.
 27   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *:    :   *:   *    *    *    *    *    *    *    0.
 28   *    *    *    *    *    *    *    *    *:    :   *    *    *    *     :                                                1.
 29                               200       183            *    *    *    *:    :   *:   *    *    *    *    *    *    *    *   26.
 30   *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    *     .
 31   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
MEAN  0.   0.   0.   0.   1.   0.   8.   0.   7.   1.   1.    .   0.   1.   0.   0.   1.   0.   0.   0.    .   0.   0.   0.

                    TOTAL NUMBER OF OBSERVATIONS =  7662    MEAN  =       1.

         * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

         : INDICATES CALIBRATION DURING THE HOUR
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DIURNAL VARIATION OF NITROGEN DIOXIDE(UG/M**3)
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1				*I	*	*					35	I	*I	*	*		*	I	I	I	I	I	*	9	6.
2	16	12	*	*	*	*	*	*I	17I	*	*	I	I	I	I	I	*I	*	*	*	*	*	*	*	5.
3	*	*	*	*	*	9	26	25	22	18	19	I	*	*	*	*	*	*	*	*	*	*	*	*	6.
4	*	*	*	*	*	*	*	*	*	*	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
5	*	*	*	*	*	*	*	*	*	*I	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	.
6	*	*	*	*	*	*	*	*	*	*I	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
7	*	*	*	*	*	*	*	*	*	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
8	*	*	*	*	*	*	*	*	*	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
9	*	*	*	*	*	*	*	*	*	*	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
10	*	*	*	*	*	*	*	*	*	*	*I	*I	*	*	*	*	*	*	*	*	*	*	*	*	1.
11	*	*	*	*	*	*	*	*	*	*	*	I	I	I	9I	*	*	*	*	*	*	*	*	*	6.
12	*	*	*	*	*	*	*	*	*	*	*	*	*	9	*	*	*	*	*	*	*	*	*	*	8.
13	*	*	*	*	*	*	*	9	*	*	*	*	9	9	10	*I	*	*	*	*	*	*	*	*	5.
14	*	*	*	*	*	*	*	*	*	*I	I	*	*	*	*	*	*	*	*	*	*	*	*	*	.
15	*	*	*	*	*	*	*	*	*	I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	.
16	*	*	*	*	*	*	*	*	*	*	*I	*	*	*	*I										.
17																									.
18										I	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
20	*	*	*	*	*	*	*	*	*I	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
21	*	*	*	*	*	*	*	*	*	*	*I	*I			*	*	*	*	*	*	*	*	*	*	0.
22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	.
23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
24	*	*	*	*	*	*	*	*	*	*I	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.
26	*	*	*	*	*	*	*	*	*	*	*I	*I	*	*	*	*	*	*	*	*	*	*	*	*	2.
27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*I	I	*I	*	*	*	*	*	*	*	0.
28	*	*	*	*	*	*	*	*	*I	I	*	*	*	64	I										4.
29							*		*		*	*	*	*I	I	*I	*	*	*	*	*	*	*	*	0.
30	*	*	*	*	*	*	*	*	*	*I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.
31	*	*	*	*	*	*	11	12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5.
MEAN	2.	2.	1.	2.	2.	2.	2.	3.	2.	2.	4.	1.	1.	3.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	

TOTAL NUMBER OF OBSERVATIONS = 7662 MEAN = 2.

* DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

I INDICATES CALIBRATION DURING THE HOUR

```
                         DIURNAL VARIATION OF SULFUR DIOXIDE(UG/M**3)
                          TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                HOUR
          1   2   3   4   5   6   7   8   9   10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

 1        *   *   *   *:  *   *   *   *   *   *   *    :  *:  *   *    :   :   :   :   :   :   :  *   *    0.
 2        *   *   *   *   *   *   *   *:  *:  *   *   *:  *   *:  *   *    :  *:  *   *   *   *   *   *     .
 3        *   *   *   *   *   *   *   *   *   *   *    :  *   *   *   *   *   *   *   *   *   *   *   *    1.
 4        *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *    0.
 5        *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *   *     .
 6        *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *   *    0.
 7        *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
 8        *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *     .
 9        *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *    0.
10        *   *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *    0.
11        *   *   *   *   *   *   *   *   *   *   *    :  *:  *:  *:  *   *   *   *   *   *   *   *   *    0.
12        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
13        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *    0.
14        *   *   *   *   *   *   *   *   *   *:   :  *   *   *   *   *   *   *   *   *   *   *   *   *    0.
15        *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
16        *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *:  *   *   *   *   *   *   *   *   *    0.
17        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
18        *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *   *    0.
19        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
20        *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *     .
21        *   *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *     .
22        *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *    0.
23        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
24        *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *   *    0.
25        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
26        *   *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *    0.
27        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
28        *   *   *   *   *   *   *   *   *:   :              *           *   *   *   *   *   *   *   *    0.
29        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
30        *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
31        *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0.
 MEAN     0.  .   .   .   0.  .   .   .   .   0.  1.  0.  .   .   .   .   .   0.  .   .   .   .   .   .

                          TOTAL NUMBER OF OBSERVATIONS =  8539     MEAN  =          .

          * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

          : INDICATES CALIBRATION DURING THE HOUR
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CORPORATION

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                 DIURNAL VARIATION OF HYDROGEN SULFIDE(UG/M**3)
                    TRAILER NO. - 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                       HOUR
        1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24 MEAN
DAY

 1      *    *    *    *I   *    *    *    *    *    *    *     I    I    I    I    I    I    I    I    I    I   *I    I    I     .
 2       I    I    I    I    I    I    I    I   *I   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    1.
 3      *    *    *    *    *    *    *    *    *    *    *     I   *    *    *    *    *    *    *    *    *    *    *    *    0.
 4      *    *    *    *    *    *    *    *    *    *    *I   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 5      *    *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 6      *    *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *    *     .
 7      *    *    *    *    *    *    *    *    *    *I   *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
 8      *    *    *    *    *    *    *    *    *    *I   *    *    *    *    *    *    *    *    *    *    *    *    *    *     .
 9      *    *    *    *    *    *    *    *    *    *    *I   *    *    *    *    *    *    *    *    *    *    *    *    *     .
10      *    *    *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *    0.
11      *    *    *    *    *    *    *    *    *    *    *     I   *I   *I   *I   *    *    *    *    *    *    *    *    *    0.
12      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
13      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *I   *    *    *    *    *    *    *    *    0.
14      *    *    *    *    *    *    *    *    *    *I    I   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
15      *    *    *    *    *    *    *    *    *    *I   *    *    *    *    *    *    *    *    *    *    *    *    *    *     .
16      *    *    *    *    *    *    *    *    *    *    *I   *    *    *    *I   *    *    *    *    *    *    *    *    *     .
17      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
18      *    *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
19      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
20      *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *    *    *     .
21      *    *    *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *     .
22      *    *    *    *    *    *    *    *    *    *    *I   *    *    *    *    *    *    *    *    *    *    *    *    *    0.
23      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
24      *    *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *    *     .
25      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     .
26      *    *    *    *    *    *    *    *    *    *    *I   *I   *    *    *    *    *    *    *    *    *    *    *    *     .
27      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    0.
28      *    *    *    *    *    *    *    *    *I    I                  *              *    *    *    *    *    *    *    *    0.
29      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    7    9   10   10   10   10    4.
30     10   10   10   11   10    9   10   10   10    *I   *    *    *    *    *    *    *    *    *    *    *    *    *    *    5.
31      *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    2.
MEAN   1.   1.   1.   1.   1.   1.   1.   1.   1.   0.   0.   0.   0.    .   0.   0.   0.   0.   0.   0.   1.   1.   1.   1.

                        TOTAL NUMBER OF OBSERVATIONS =  8417    MEAN  =      0.

            * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

            I INDICATES CALIBRATION DURING THE HOUR
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                           DIURNAL VARIATION OF TOTAL HYDROCARBONS(UG/M**3 X 10**-1)
                                TRAILER NO. - 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                   HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

  1                     :115 108 104 106 111 121 117    :114:108 107 113 111    :   :   :   :106  98  99 110.
  2     101 101 100                     :   :102 105    :   :   :   :   :    274 266                     151.
  3                                                     :
  4                                                 :
  5                                             :   :111 105 107 107 104 104                             107.
  6                                             :   :158         221 147 144 144 144 145 144 144 145 144 152.
  7     139 140 142 143 142 142 142 145 140 139:141 141 135 141                                         142.
  8
  9
 10
 11                                              115    :   :   :   :                                   115.
 12
 13                      113 114 114 114                            :   :   :                           114.
 14                                             :   : 89  91  90  88  88  89  89  89  89  89  88  88  89  89.
 15      89  90  90  90  92  89  88  89  90    :104 108 105 107 106 105 103 101            108      99  98.
 16      99  99      91  94  91  91  95 103 103    :105 110     152:124 105 102 100 104 105 103 100 103 104.
 17     104 106 104 103 103 102          99 100  99 101  97  95  93  93  93  93  97  92  95  97  92  95  98.
 18      89  87  89  88  88  87  88  88  97  98:102: 95  91  91  90  93  94  94  91  91  91  91  91  91  92.
 19      91  91  92  91  91  91  92  92  96 115 100  97  97  95  94  92  92  94 101  93  93  93  92  92  95.
 20      92  93  93  93  93  93  93  92  92: 99: 91  91  93  94  92  93 116  96  91  91  90  99  90  90  94.
 21      90  93 102 109 117 115  95 109 151 208 163 122 101 100 101 102 101 102 102 102 102 102 102 102 112.
 22     103 103 103 102 101 101 101 101 104 102 102 138 186 163 135 103 104 104 105 107 105 104 104 112 112.
 23     103 103 107 104 103 103 103 103 103 103 103 102 100 101 100 100 100 101 102 103 104 106 111 104 104.
 24     104 104 103 103 103 112 106 111 109 109 105 110 103 104 106 102 102 102 101 101 101 102 103 105 105.
 25     106 107 106 103 103  98 103 101 110 104 104 105 104 105 105 104 104 104 104 104 104 104 103 104 105.
 26     112 103 104 103 103 102 103 102 103 102 102:102: 99  99 100 100 100  99  99  99  99 100 100 100 102.
 27         100      96                     100 100 101 101 102 103 103 101 102 103 104 108 102 103 103 102.
 28     102 102 101 102 102 102 102 102 101 104 106 105 103 102         103 101 102 102 102 101 102 102 103.
 29     101 101 101 101 101 101 101 101 102 102 102 108 107 105 105 105 105 103 103 103 104 103 104 104 104.
 30     104 105 104 104 104 104 104 104 104    :   :   :   :   :   :   :106 105 106 105 105 106 107 108 105.
 31     106 106 110 106 107 109 106 105 109 106 106 106 106 106 107 106 106 110 105 105 106 106 106 106 107.
MEAN    102.102.103.102.104.104.102.104.107.112.110.109.107.106.110.104.104.111.112.103.103.104.102.103.

                         TOTAL NJMBER OF OBSERVATIONS =  5205     MEAN  =     105.

                : INDICATES CALIBRATION DURING THE HOUR
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CORPORATION

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                  DIURNAL VARIATION OF METHANE(UG/M**3 X 10**-1)
                  TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                 HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24   MEAN
DAY

   1                   : 96  97  97  97  97  98  98    : 98:104  99  98  99    :   :   :   : 94  94  95    98.
   2     94  94  94                    :   : 96  93    :   :   :   :118 114 109 108 102  98  97  96   102.
   3     98  95  95  95  95  94  94  94  94  94  95    : 96  95  95  95  95  95  94  94  94  94  94  94    95.
   4     94  94  94  94  94  94  98  93  95 100  99: 97  95  96  95  95  95  94  94  94  93  93  93  94    95.
   5     94  94  95  97  98 104 102 101 101 101:   :102  97  97  98  98  98                                99.
   6                                           :   :136         118 131 131 130 129 129 129 129 129 130   130.
   7    129 129 129 130 129 129 129 130 129 125:119 119 120 120                                           127.
   8                                        120 120 118 118 127 123 114 113 113 113 112 112 113 113 113   116.
   9    113 112 112 113 113 114 114 114 115 115 115 115 114 113 114 113 114 115 117 113 114 112 113 113   114.
  10    118 116 114 114 114 114 114 116 116 117 118 117 117 116 117 116 119 116 115 115 121 117 115 114   117.
  11    114 114 114 114 114 114 114 114 114 114 115    :   :   :   :118 118 117 116 116 118 117 116 115   116.
  12    114 113 116 116 115 114 114 114 114 113 113 114 114 116 118 117 116 116 116 116 116 115 114 113   115.
  13    113 113 113 113 113 114 114 114 114 113 113 113 113    :   :   :                                  114.
  14                                           :   : 82  83  81  80  79  79  80  79  79  80  79  79  79    80.
  15     79  80  80  80  80  80  80  79  80    : 91  94  92  93  92  91  90  90              90      90    86.
  16     90  89      89  89  89  89  83  89  90    : 91  91     109: 93  92  90  90  91  92  92  91  91    91.
  17     90  91  91  90  90  90          89  90  94  90  95  95  93  92  92  91  89  89  89  89  88  88    91.
  18     87  87  89  88  88  87  88  88  88  88: 91: 91  91  91  90  93  94  94  91  91  91  91  91  91    90.
  19     91  91  91  91  91  91  92  92  92  95  99  97  95  95  94  92  92  94 101  93  93  93  92  92    94.
  20     92  93  93  93  93  93  93  92  92: 91: 91  91  93  94  92  92  91  91  91  91  90  90  90  90    92.
  21     90  91  92  91  91  91  91  91  91  91  91  75  91  91  92  92  91  91  91  91  91  91  91  91    91.
  22     91  91  91  91  90  90  90  90  90  90  91  91  93  92  92  93  93  92  93  94  93  91  91 101    92.
  23     91  91  91  91  91  91  91  91  91  91  91  90  90  90  90  89  89  89  90  91  91  91  91  92    91.
  24     91  91  91  91  92  90  92  96  94  94  92  92  91  92  93  90  91  91  90  90  90  90  91  93    92.
  25     93  93  94  91  91  90  91  91  91  91  91  91  92  92  92  92  92  93  92  92  92  92  92  92    92.
  26    102  92  92  92  92  92  91  91  91  91  91: 92: 91  91  91  91  90  90  90  89  89  89  89  89    92.
  27         89      89                      89  89  90  90  90  91  91  90  92  92  93  96  91  91  91    91.
  28     91  90  90  90  90  90  90  91  90  91  91  91  91  92          95  93  92  91  91  91  90  91    91.
  29     91  90  91  90  90  90  90  90  90  90  93  94  95  92  91  92  92  91  91  90  90  90  90  90    91.
  30     90  90  90  90  90  90  90  90  90    :   :   :   :   :   :   : 92  91  91  91  91  91  92  93    91.
  31     92  91  91  91  91  92  91  91  91  92  92  91  92  92  91  91  91  91  91  92  92  91  91  92    92.
 MEAN    98. 97. 98. 97. 97. 98. 98. 98. 98. 99.100. 99. 98. 98. 98. 99. 99. 98. 98. 98. 98. 97. 97. 97.

                 TOTAL NUMBER OF OBSERVATIONS =  7323    MEAN =      98.

        : INDICATES CALIBRATION DURING THE HOUR
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DIURNAL VARIATION OF NON-METHANE HYDROCARBONS(UG/M**3 X 10**-1)
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1				:	18	11	7	9	14	23	19	:	15:	8	7	15	12	:	:	:	:	12	5	4	13.
2	5	6	6					:	:	6	12	:	:	:	:	:		160	157						52.
3												:													
4											:														
5										:	:	9	8	10	9	5	6								9.
6										:	:	22			103	16	13	14	14	16	15	15	15	13	22.
7	10	10	12	13	13	12	13	15	11	14:	21	21	14	21											15.
8																									
9																									
10																									
11											0	:.	:	:	:										0.
12																									
13					0	0	0	0						:	:	:									0.
14										:	:	7	8	8	8	8	9	10	9	9	9	9	9	9	9.
15	10	9	10	9	11	8	8	9	9	:	13	13	13	13	14	14	13	12				18		10	12.
16	9	9		1	5	3	2	12	14	14	:	14	19		43:	31	13	11	10	13	13	11	9	12	13.
17	14	15	13	13	13	12			10	11	9	11	2	0	0	1	1	2	8	3	6	8	4	8	8.
18	2	0	0	0	0	0	0	0	9	10:	10:	3	1	0	0	0	0	0	0	0	0	0	0	0	2.
19	0	0	1	0	0	0	0	0	3	21	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2.
20	0	0	0	0	0	0	0	0	0:	8:	0	0	0	0	0	1	25	5	0	0	0	8	0	0	2.
21	0	2	10	17	26	24	4	18	60	116	71	47	9	10	9	9	10	10	10	11	11	11	11	11	22.
22	11	11	11	11	11	11	11	11	14	12	11	46	92	71	43	10	11	12	12	13	12	12	12	10	20.
23	13	12	16	12	12	12	12	12	12	12	12	12	10	11	10	10	11	11	12	12	13	14	20	12	13.
24	12	12	12	12	11	22	13	15	15	15	13	18	12	12	13	12	11	11	11	11	11	12	12	11	13.
25	12	13	12	12	12	8	12	10	18	13	13	13	13	12	13	12	12	10	12	11	12	11	11	11	13.
26	10	11	12	11	11	11	11	10	11	12	10:	9:	8	8	10	9	9	9	9	10	9	10	10	10	11.
27		11		7						10	10	11	11	11	12	12	11	10	11	12	12	11	11	11	11.
28	11	11	11	11	11	11	11	11	10	13	16	14	13	10			8	8	9	10	11	11	11	11	12.
29	11	11	11	11	11	11	11	11	12	12	9	13	12	13	14	13	12	12	12	14	14	13	14	14	13.
30	14	15	14	13	14	14	14	14	14	:	:	:	:	:	:	:	14	14	14	15	14	14	14	15	15.
31	14	15	19	14	15	17	15	14	17	15	15	14	14	14	15	14	14	18	14	14	14	14	15	14	15.
MEAN	9.	10.	10.	10.	11.	10.	8.	10.	15.	20.	15.	15.	14.	12.	16.	10.	11.	17.	18.	10.	10.	11.	10.	10.	

TOTAL NUMBER OF OBSERVATIONS = 5205 MEAN = 12.

: INDICATES CALIBRATION DURING THE HOUR

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                  DIURNAL VARIATION OF CARBON MONOXIDE(UG/M**3 X 10**-1)
                        TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                            HOUR
         1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  MEAN
DAY

 1      36   42   38     !  41   78   41   41   42   55   79     !  50!  52   34   49   46     !    !    !    !  30   30   32   46.
 2      29   38   31   31   30   31   34   34!    !  43   24     !    !    !    !    !                           97   91   88   47.
 3      84   80   78   77   76   74   76   75   74   74   75     !  48   41   59   86   71   72   75   75   75   77   76   79   72.
 4      78   77   78   77   76   75   76   75   74   74     ! 104   96   99   93   84   81   79   74   71   71   72   72   72   80.
 5      72   73   74   74   75   74   75   75   74   76!    !  38   73   51   40   38   41   39   40   38   38   39   38   38   56.
 6      38   39   39   38   37   39   38   40   39   39!    !  62   76   71   83   93   91   95   95   96   88   97   97   97   67.
 7     107   96   97  110   95  104   94   92   95   95!  98   97   97   97   96   96   95   93   93   93   93   92   93   91   97.
 8      90   91   92   89   90   91  120   90   91   93   95   93   92   98   86   67  108   64   64   58   60   60   59   57   84.
 9      60   58   58   58   60   56   56   54   54   55   61   58   57   54   55   54   51   52   50   50   48   49   48   48   55.
10      49   49   50   49   47   50   47   47   47   48   47   49   49   49   51   49   54   50   51   48   51   48   50   49   50.
11      49   46   47   49   47   48   50   50   50   50   50     !    !    !    !  80   42   48   48   48   46   47   46   48   50.
12      49   73   66   52   49   46   45   46   47   46   48   50   82   70   48   87   47   46   46   43   47   45   45   45   53.
13      43   46   46   44   44   45   45   45   46   43   45   50   50     !    !    !                                          46.
14                                                         !    !  42   43   42   35   33   33   32   31   47   46   32   53   38   39.
15      38   31   77   30   33   32   32   34   33     !  66   23   22   23   21   23   22   22   23   22   22   21   21   22   31.
16      21   21   21   21   22   64   20   21   62   21     !  24   25   24   27!  25   23   23   22   23   23   21   22   23   26.
17      20   22   22   22   21   22   21   22   22   24   22   23   22   40   23   24   23   22   22   22   22   21   20   20   23.
18      23   30   23   22   22   21   21   22   22   23!  23!  21   22   21   21   21   21   20   20   20   21   53   20   19   23.
19      21   22   19   19   19   20   19   45   19   21   21   21   21   22   24   21   22   21   22   20   82   21   20   21   25.
20      22   21   22   22   22   22   23   22   22!  36!  27   27   44   26   26   25   26   26   24   25   25   22   24   24   25.
21      25   24   40   25   24   25   23   24   24   24   23   42   21   22   28   28   26   26   27   47   26   25   27   25   28.
22      25   25   24   25   23   25   25   24   24   25   25   26   30   25   26   27   26   25   25   24   26   26   22   24   26.
23      24   50   31   23   25   24   48   25   24   24   24   22   46   28   23   46   22   22   22   23   22   57   22   24   29.
24      23   24   26   24   22   26   21   23   24   23   23   24   23   23   69   24   24   24   24   24   24   25   24   22   26.
25      24   25   25   25   39   66   23   24  105   37   60   35   27   27   29   82   41   53   59   66   70   76   77   79   49.
26      82   82   82   85   90   84   81   78   78   81   81!  98!  83   73   69   66   62   58   56   52   50   52   51   50   72.
27      49   49   49   69   48   47   48   48   46   46   49   51   51   32   22   23   28   29   22   21   22   23   22   22   38.
28      22   23   22   23   21   21   20   21   22   20   26   27   28   29             36   32   29   23   21   21   22   20   25.
29      21   21   20   20   20   19   19   20   23   28   27   15   15   16   14   14   14   13   14   12   13   12   12   12   18.
30      11   11   12   13   13   13   12   11   12     !    !    !    !    !    !    !  15   14   12   14   13   13   14   13   13.
31      13   13   13   13   15   13   52   14   15   16   16   14   15   16   17   16   16   16   16   16   16   16   15   39   18.
MEAN    42.  44.  45.  43.  42.  46.  44.  42.  46.  45.  46.  44.  47.  44.  44.  47.  42.  40.  40.  40.  42.  43.  41.  42.

                  TOTAL NUMBER OF OBSERVATIONS =  8122     MEAN  =      43.

        ! INDICATES CALIBRATION DURING THE HOUR
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CORPORATION

DIURNAL VARIATION OF OZONE(UG/M**3)
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	92	95	94	92:	90	89	84	87	83	86	87	93:	91:	91	93	92	87	:	:	:	77	77	79	81	88
2	84	81	80	80	80	81	80	84:	62:	70	72	72	71	70	69	70:	59:	68	64	54	46	47	47	49	69
3	51	51	50	50	46	47	46	47	44	42	44	:	69	63	58	55	48	42	43	48	55	56	55	58	51
4	58	57	57	55	58	55	58	53	52	51	63:	68	74	74	77	77	74	71	77	73	71	70	71	68	66
5	68	61	59	54	50	50	47	50	63	62:	48:	48	66	67	64	63	62	60	57	58	57	60	61	61	59
6	52	62	61	61	56	48	46	45	46	57:	76:														56
7										80:	70	65	64	65	66	65	64	63	64	64	65	63	66	65	66
8	64	64	66	65	63	63	63	62	62	64:	63	64	63	62	61	60	59	60	61	59	60	61	62	61	63
9	61	62	60	59	59	59	58	55	58	61	63:	64	66	71	73	70	67	61	51	50	53	53	54	58	61
10	62	52	50	55	54	52	52	50	48	50	44:	59:	63	65	68	69	68	63	60	63	64	63	66	68	60
11	70	71	71	74	72	73	74	73	68	69	63	:	67:	61:	59:	62	62	59	55	58	61	57	61	63	66
12	62	60	63	65	65	65	54	66	64	56	56	63	64	64	64	63	62	56	57	59	63	61	61	65	62
13	65	63	64	65	64	65	57	68	65	67	72	71	69	68	64	75:	78	77	77	79	83	83	84	83	72
14	79	78	78	79	81	82	79	77	73	74:	:	69	71	72	68	67	66	63	61	66	65	66	67	63	72
15	64	63	59	60	61	62	53	61	62	62:	63	72	74	75	78	78	76	71	72	71	74	72	73	74	69
16	74	76	74	74	74	73	70	65	67	67	62:	67	72	75	80:	66	68	63	65	67	68	66	66	66	70
17	66	67	68	67	68	69	68	69	68	62	62	67	68	70	70	70	66	65	69	67	67	69	71	71	68
18	71	72	70	72	71	72	74	75	72	68:	61:	68	68	68	66	61	58	60	62	64	65	67	66	64	68
19	65	65	63	58	57	63	63	62	58	55	57	55	58	61	64	58	68	64	62	61	59	57	59	60	61
20	61	61	60	62	60	59	51	61	56:	57:	64	68	69	73	73	72	69	63	60	63	65	70	73	76	65
21	72	77	77	73	72	70	72	70	68	71	75:	76:	76	77	77	77	73	68	70	72	68	67	68	69	73
22	72	70	68	58	67	69	69	68	67	63	70:	79	75	80	80	76	74	71	67	69	71	73	75	74	72
23	75	75	75	73	70	71	71	72	70	73	76	79	78	77	76	75	74	74	73	72	70	69	67	67	73
24	67	66	66	67	64	65	50	55	59	61:	63:	62	65	67	66	68	68	66	64	64	63	63	64	60	64
25	56	58	59	61	62	62	61	63	62	57	68	69	69	70	70	69	65	63	63	63	63	68	69	65	64
26	65	66	67	66	66	66	56	67	65	69	68:	67:	67	67	65	65	64	63	63	63	62	62	63	63	66
27	63	64	64	63	63	63	64	63	65	65	64	64	70	73	75	70	69	69	68	69	66	67	66	66	67
28	67	67	67	69	69	71	71	71	69:	66:	73	79	77	77			67	66	65	65	65	68	70	71	70
29	69	69	71	71	70	67	70	67	68	68	69	67	66	65	68	67	67	68	65	66	67	67	68	68	68
30	70	59	68	67	69	68	58	66	65	65	66	59	53	56	60	60	59	58	55	57	53	57	58	57	62
31	58	55	57	59	61	62	54	67	65	67	69	70	71	75	78	79	80	79	78	79	79	77	76	75	70
MEAN	68	67	67	66	66	66	65	65	64	64	66	68	69	71	71	70	68	65	64	65	65	66	67	67	

TOTAL NUMBER OF OBSERVATIONS = 8387 MEAN = 67.

: INDICATES CALIBRATION DURING THE HOUR

HOURLY TOTAL PRECIPITATION(HUNDREDTHS OF INCHES)
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.
TOTAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	

TOTAL NUMBER OF OBSERVATIONS = 8849 TOTAL = 0.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND SPEED AT 8 FEET(MPH)
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	10	3	2	5	3	2	2	1	0	0	1	2	2	2	2	2	1	2	2	1	3	2	2	1	3.
2	1	2	1	2	1	1	2	1	1	3	1	5	6	7	8	8	7	5	3	2	2	3	2	2	4.
3	3	2	3	3	1	2	2	2	1	1	1	1	2	1	3	3	2	4	2	2	1	2	1	1	2.
4	1	1	1	2	1	1	2	2	2	2	2	3	8	6	5	5	3	5	8	5	2	1	2	2	4.
5	1	1	2	2	1	1	1	0	1	2	4	7	7	9	7	6	3	1	1	2	2	2	1	1	3.
6	1	1	1	0	1	0	0	0	0	0	0	3	3	2	2	1	3	4	3	1	2	6	2	7	2.
7	9	8	6	3	0	1	1	2	2	2	3	2	4	7	8	7	8	7	7	2	3	1	6	5	5.
8	2	2	3	1	2	2	1	2	2	6	10	11	10	11	10	8	5	1	3	1	7	17	19	5	6.
9	6	3	8	5	13	10	5	2	4	9	14	11	10	12	12	10	9	4	3	3	2	1	4	6	7.
10	8	6	4	5	3	2	1	1	1	2	4	2	2	3	4	6	1	0	2	2	1	1	1	1	3.
11	1	1	1	1	1	1	1	0	0	0	2	4	3	2	1	0	0	1	4	1	1	2	2	1	2.
12	2	2	1	0	1	1	2	0	0	1	1	2	4	4	2	3	3	3	2	0	1	1	2	1	2.
13	1	0	0	2	3	2	2	2	1	4	8	9	9	9	8	5	3	4	3	2	2	1	1	2	4.
14	2	2	2	2	1	0	1	2	1	1	0	2	2	2	3	3	1	1	2	1	1	0	0	2	2.
15	1	1	1	2	1	1	1	1	0	0	3	5	6	6	4	2	3	2	2	1	0	0	0	2	2.
16	2	0	1	2	2	1	2	1	0	1	2	2	3	3	2	3	1	4	2	1	0	0	2	0	2.
17	0	0	0	0	1	0	1	0	0	0	1	2	2	2	2	2	2	1	1	2	1	1	1	2	2.
18	0	1	2	2	2	2	2	3	2	1	2	6	6	5	6	4	1	1	2	1	2	1	1	1	3.
19	0	1	1	3	2	1	0	1	1	3	4	5	6	7	7	8	6	2	2	2	1	2	3	1	3.
20	0	0	1	1	0	2	0	0	0	2	2	2	2	2	2	2	1	2	3	1	2	1	1	2	2.
21	2	2	3	2	4	3	3	4	3	2	5	6	5	4	3	4	4	3	1	0	2	1	2	1	3.
22	1	1	2	2	1	1	0	1	0	1	3	3	5	6	4	3	1	2	2	1	2	1	1	2	2.
23	2	1	3	2	2	2	2	2	2	2	5	10	10	5	8	5	2	3	9	9	11	10	9	10	6.
24	10	6	6	3	1	2	3	2	4	3	5	3	6	5	3	7	8	5	3	3	1	0	1	1	4.
25	1	0	2	1	2	1	0	1	1	1	1	1	2	1	3	6	6	5	2	2	3	3	4	4	3.
26	2	4	2	2	3	3	3	2	2	2	3	8	5	6	8	10	9	8	3	2	2	3	2	3	4.
27	4	6	7	4	4	8	5	8	8	9	7	8	17	15	11	9	5	2	2	1	2	2	2	1	7.
28	2	3	2	1	0	1	0	1	0	0	1	1	2	4			5	2	1	1	2	2	2	2	2.
29	3	2	1	4	1	1	2	1	2	2	3	2	4	4	6	8	8	10	2	2	2	2	2	2	4.
30	2	1	2	2	7	2	3	2	0	4	6	6	5	6	7	5	5	3	0	0	1	1	0	0	3.
31	1	2	0	0	0	1	2	4	1	4	6	9	10	12	12	11	9	6	6	2	4	6	3	6	5.
MEAN	3.	3.	3.	3.	3.	2.	2.	2.	2.	3.	4.	5.	6.	6.	6.	6.	5.	4.	3.	2.	3.	3.	3.	3.	

TOTAL NUMBER OF OBSERVATIONS = 8845 MEAN = 3.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND SPEED AT 30 FEET(MPH)
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	14	4	4	7	7	3	5	2	2	0	2	2	3	3	3	3	1	4	2	3	7	3	3	1	4.
2	2	4	3	2	2	2	3	1	2	3	2	6	7	9	11	10	10	8	4	3	3	4	3	3	5.
3	4	4	4	4	3	3	3	3	2	2	1	2	2	1	4	4	3	6	3	2	1	2	2	0	3.
4	0	1	1	3	2	1	2	3	3	3	3	4	9	7	6	7	4	7	11	7	3	3	3	3	4.
5	2	2	3	4	2	1	1	1	2	3	5	8	8	11	9	8	6	2	1	1	3	3	2	1	4.
6	2	2	1	0	2	0	1	1	0	0	0	3	4	3	2	1	5	7	6	2	4	8	4	10	3.
7	12	11	8	4	2	2	2	3	3	3	4	3	6	9	10	10	11	9	9	4	4	3	9	7	7.
8	3	4	5	3	3	2	2	3	2	8	13	13	13	14	13	11	8	3	4	3	10	22	24	8	8.
9	9	5	12	8	18	14	8	3	5	12	19	14	13	15	15	12	13	6	4	6	4	3	7	9	10.
10	11	9	6	7	5	4	3	2	2	4	5	3	3	5	5	6	3	1	1	2	1	2	2	2	5.
11	2	2	3	2	2	2	2	0	1	1	2	5	4	3	2	0	1	1	6	3	1	3	3	2	3.
12	3	3	1	0	1	1	4	0	1	0	1	3	5	4	3	4	5	4	4	1	0	2	3	2	3.
13	2	1	1	3	5	4	3	4	3	5	10	12	11	12	10	7	5	6	5	4	3	2	3	3	6.
14	3	2	4	4	3	1	1	3	2	1	1	2	3	3	4	4	3	2	4	1	3	0	1	3	3.
15	2	2	2	4	3	2	2	2	0	0	4	7	8	7	6	4	5	3	2	2	1	1	2	3	4.
16	3	1	2	2	3	2	3	1	2	1	3	3	4	4	3	4	1	5	3	1	0	1	3	1	3.
17	1	0	0	1	0	1	1	0	0	0	1	3	3	3	2	2	3	2	1	2	3	1	1	3	2.
18	0	1	2	3	3	3	5	5	3	2	2	7	7	7	8	5	2	1	4	2	3	2	2	1	4.
19	0	0	2	5	3	0	0	1	1	4	5	6	8	9	10	11	10	5	3	2	2	4	4	1	4.
20	0	0	1	1	1	3	1	0	1	2	2	3	3	2	3	2	2	4	5	1	3	1	2	4	2.
21	4	4	4	4	5	4	3	6	4	3	7	7	7	5	4	6	6	5	1	0	2	2	2	1	5.
22	2	0	2	2	2	1	0	1	1	3	4	4	6	7	5	4	3	3	3	1	2	2	1	2	3.
23	2	1	4	3	4	3	3	3	3	3	7	12	12	6	11	6	3	4	12	13	15	13	11	14	7.
24	13	9	9	5	2	2	4	4	6	4	7	5	8	7	6	9	11	8	5	4	1	0	1	2	6.
25	3	0	2	2	3	1	1	2	2	1	2	2	3	2	5	8	9	7	3	4	5	5	6	7	4.
26	4	6	4	4	4	5	4	3	3	3	5	10	7	7	10	13	11	11	4	3	4	5	3	5	6.
27	5	8	9	6	6	11	8	11	12	12	9	11	22	20	14	12	8	5	3	4	4	4	4	2	9.
28	4	6	4	2	1	2	1	2	2	0	2	2	3	5			7	5	2	1	3	3	4	4	3.
29	5	3	4	8	3	1	2	2	3	4	4	3	5	6	8	11	11	13	4	3	4	4	4	3	5.
30	3	3	5	4	10	4	5	4	2	7	8	8	7	8	9	7	7	5	2	0	2	1	0	0	5.
31	2	3	1	1	1	3	5	6	2	6	8	11	14	15	15	15	13	9	9	5	6	7	5	9	8.
MEAN	4.	4.	4.	4.	4.	3.	3.	3.	3.	4.	5.	6.	7.	8.	8.	7.	7.	6.	5.	3.	4.	4.	4.	4.	

TOTAL NUMBER OF OBSERVATIONS = 8844 MEAN = 5.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 100 FEET(MPH)
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	17	5	5	9	10	5	4	4	2	0	2	2	3	3	3	3	1	4	2	4	8	2	4	1	5.
2	1	4	2	2	2	3	1	1	3	4	2	7	8	10	12	13	13	12	6	4	3	3	2	3	6.
3	3	4	3	4	4	3	6	4	2	2	1	3	3	1	5	4	4	10	3	2	1	1	2	1	4.
4	0	0	1	2	0	1	4	5	5	3	3	5	11	8	7	8	6	9	14	10	4	3	4	5	5.
5	1	3	5	5	2	2	2	2	3	3	6	10	10	13	10	9	8	4	2	0	2	3	2	1	5.
6	2	2	0	1	2	0	2	1	0	0	1	4	5	4	2	1	6	10	11	6	8	11	5	13	5.
7	15	14	11	6	2	3	3	3	5	3	5	4	7	10	12	11	13	12	11	5	5	4	12	11	8.
8	5	5	9	5	2	2	2	3	2	10	15	15	15	15	15	12	9	4	5	5	14	27	29	9	10.
9	12	7	16	12	23	17	11	3	7	15	22	16	15	17	18	15	15	8	6	8	5	5	9	11	13.
10	13	12	8	8	7	6	5	4	3	4	6	4	3	5	6	9	5	2	0	2	1	3	3	2	5.
11	1	1	3	1	1	3	2	0	1	1	2	5	4	3	2	0	2	2	6	3	1	4	4	1	3.
12	1	4	1	0	1	0	2	1	0	0	1	3	5	5	3	5	6	3	3	1	0	2	1	1	3.
13	3	1	0	3	7	6	5	3	4	7	12	14	12	13	11	8	6	7	7	5	5	1	2	6	7.
14	6	1	3	5	2	1	1	2	2	2	1	2	4	3	5	5	4	2	3	1	1	0	0	3	3.
15	3	3	4	4	1	1	3	1	0	1	4	7	9	8	7	4	7	3	1	1	1	2	2	2	4.
16	2	2	3	2	3	1	3	1	3	2	3	3	4	4	4	5	1	6	3	0	0	1	1	1	3.
17	1	0	0	0	0	1	2	0	0	0	1	3	3	3	3	2	2	1	0	0	1	1	2	1	2.
18	0	3	3	6	2	3	5	6	5	2	3	9	8	7	9	6	3	1	5	2	2	1	1	1	4.
19	0	0	1	6	4	2	0	1	2	4	5	7	8	10	11	12	12	6	3	2	2	3	4	0	5.
20	0	0	1	0	0	2	1	0	1	3	3	3	3	2	3	3	3	4	4	0	3	2	3	4	2.
21	5	5	4	4	6	3	3	7	4	4	8	8	7	5	4	6	8	9	2	1	0	1	2	1	5.
22	3	0	0	2	2	1	0	1	1	4	5	4	7	8	6	5	5	4	3	1	0	1	0	2	3.
23	3	1	5	1	3	3	4	5	4	4	9	14	14	7	12	8	5	6	15	17	20	17	14	17	9.
24	16	12	13	8	3	4	6	5	7	5	8	5	10	8	7	11	14	10	6	5	2	2	1	1	7.
25	2	1	1	1	3	1	2	2	4	1	2	2	4	2	5	10	12	10	5	7	7	7	8	9	5.
26	5	9	5	3	5	6	5	3	2	4	6	11	8	8	12	15	14	14	6	5	6	6	4	7	8.
27	6	10	12	8	8	15	11	15	16	15	11	13	26	24	16	14	10	7	3	6	7	7	5	3	12.
28	6	7	6	3	1	1	0	1	3	1	2	2	3	6			9	9	3	3	2	2	2	4	4.
29	5	5	8	11	6	2	4	3	4	5	5	4	5	7	9	13	14	18	4	4	5	3	4	4	7.
30	4	6	7	5	14	7	9	7	2	9	10	8	8	10	10	8	8	6	3	0	1	1	0	0	6.
31	3	1	1	1	1	4	6	8	4	7	9	13	16	18	18	18	16	11	12	7	8	11	7	12	9.
MEAN	5.	5.	5.	5.	5.	4.	4.	4.	4.	5.	6.	7.	8.	8.	9.	9.	8.	7.	6.	4.	5.	5.	5.	5.	

TOTAL NUMBER OF OBSERVATIONS = 8846 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 200 FEET(MPH)
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	19	5	6	11	13	7	2	3	2	0	2	3	4	4	4	3	2	4	1	4	8	2	2	1	5.
2	1	3	3	0	2	2	0	0	2	4	2	7	9	10	13	14	16	17	7	2	2	2	3	3	6.
3	4	5	3	4	7	3	4	5	4	3	2	4	3	1	5	4	5	12	4	1	1	2	4	2	4.
4	1	0	0	1	1	0	5	5	4	3	2	5	12	9	8	10	7	10	16	12	5	5	6	6	6.
5	2	4	8	6	2	3	3	2	4	5	7	11	11	14	11	10	9	5	2	1	2	3	0	3	6.
6	2	2	0	2	1	1	1	1	0	1	1	4	5	4	3	2	6	11	13	12	13	14	7	17	6.
7	18	16	13	8	2	4	7	4	7	3	5	4	7	10	13	13	16	16	14	6	7	6	17	15	10.
8	9	9	15	10	4	5	7	7	4	11	15	16	16	18	16	13	11	5	5	6	19	33	35	11	13.
9	14	9	20	16	29	22	14	4	8	17	25	17	17	19	20	17	18	9	6	10	5	7	11	13	15.
10	15	13	10	9	9	8	7	6	2	4	5	4	4	6	6	10	5	4	1	3	2	1	2	3	6.
11	1	2	1	1	0	3	3	1	1	1	2	4	3	3	2	1	1	2	7	3	1	3	3	2	3.
12	1	4	2	0	0	2	1	1	0	1	1	4	5	5	3	5	7	5	3	2	1	2	1	1	3.
13	3	1	0	3	6	5	5	1	6	9	13	15	14	14	12	9	6	8	9	7	7	1	3	7	7.
14	11	5	2	3	3	2	1	1	2	2	1	2	4	3	5	5	3	2	3	0	1	1	0	2	3.
15	2	4	5	3	1	2	2	1	1	1	3	7	9	9	7	4	7	5	0	1	1	2	2	2	4.
16	0	2	4	1	1	1	3	1	3	4	3	2	4	4	4	5	2	4	4	1	0	0	0	2	3.
17	2	0	0	0	0	1	1	1	0	0	0	2	3	3	2	2	2	2	0	0	0	0	3	2	1.
18	2	7	9	6	3	1	5	4	3	1	4	9	8	8	10	6	3	0	4	1	1	0	0	1	5.
19	0	2	2	2	3	1	0	1	2	6	5	7	8	11	11	13	13	7	3	2	4	3	5	1	5.
20	0	0	0	1	1	0	0	0	1	2	2	3	3	2	3	3	3	2	3	0	3	1	2	1	2.
21	3	3	2	3	6	2	3	7	2	4	8	8	8	5	5	7	9	11	3	1	0	0	2	1	5.
22	2	2	1	2	1	0	0	1	1	5	5	4	7	9	6	6	5	5	4	1	1	1	1	2	3.
23	3	2	3	1	3	3	6	5	5	6	10	15	14	7	14	9	6	8	20	20	25	20	17	20	11.
24	19	15	17	12	5	6	7	5	8	6	8	5	10	8	7	11	15	12	7	6	3	3	1	0	9.
25	1	0	1	0	4	3	1	3	4	2	2	2	3	2	5	10	14	13	9	11	9	11	10	11	6.
26	8	13	8	5	8	5	5	6	4	6	6	11	8	9	12	17	17	16	7	6	6	8	6	8	9.
27	7	12	15	11	12	20	15	18	20	18	12	13	27	25	18	15	11	8	4	7	9	9	6	3	14.
28	5	6	7	5	2	1	1	1	3	2	2	2	3	6			11	13	9	9	3	3	3	4	5.
29	7	9	11	15	12	7	7	8	5	5	5	4	6	7	10	14	16	22	6	4	5	4	5	5	9.
30	6	10	10	7	18	11	12	11	3	10	10	8	8	10	11	8	8	7	3	1	1	0	0	0	8.
31	2	1	0	1	1	5	7	12	6	8	10	14	18	20	19	19	18	13	15	10	11	14	11	15	11.
MEAN	6.	6.	6.	5.	6.	5.	5.	4.	4.	5.	6.	8.	9.	9.	9.	9.	9.	9.	7.	5.	5.	6.	6.	6.	

TOTAL NUMBER OF OBSERVATIONS = 8846 MEAN = 6.

* INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION AT 8 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	9	292	271		282	250	218	208	32	29	76	116	47	132	64	45	295	195	172	198	165	77	108	130	126.
2	190	110	156	77	121	158	114	91	65	84	348	267	220	214	205	204	202	188	102	98	134	120	94	71	136.
3	90	105	127	104	125	68	99	116	66	59	71	220	283	87	17	4	258	223	86	84	104	180	165	174	106.
4	191	209	220	203	151	189	134	103	118	68	31	264	212	194	176	202	229	191	194	161	268	285	222	250	195.
5	240	261	273	268	226	279	120	169	277	293	324	348	314	344	343		311	262	241	213	224	215	203	236	263.
6	208	203	139	182	211	87	273	123	157	290	303	9	340	32	64	165	175	171	175	193	161	175	121	186	172.
7	191	167	169	150	61	105	103	62	128	101	206	202	202	207	203	191	181	188	190	197	162	129	195	177	166.
8	144	111	187	127	53	51	35	74	73	170	181	188	194	188	197	193	170	147	151	151	186	184	176	133	152.
9	165	189	174	146	182	176	159	84	48	182	193	212	228	226	214	233	227	241	289	287	271	267	305	316	215.
10	327	318	306	300	308	285	268	263	222	278	304	334	307	3	360	352	380	179	214	219	204	250	122	220	285.
11	203	221	238	108	216	243	136	230	223	245	346	293	290	277	215	168	321	227	234	218	150	137	152	218	220.
12	230	238	150	223	254	218	221	192	226	20	12	318	304	309	355	307	273	230	221	152	198	210	217	172	238.
13	191	221	135	140	135	129	136	188	124	151	190	190	214	211	207	213	169	161	126	102	102	98	109	147	158.
14	75	47	83	115	144	179	33	212	73	81	46	6	326	291	360	358	343	188	223	182	219	183	230	234	109.
15	187	206	357	165	186	213	204	76	227	105	350	300	316	340	4	31/	299	234	215	208	177	88	204	220	228.
16	182	185	119	167	201	227	231	137	126	70	12	357	359	359	344	308	274	231	228	195	207	195	233	281	219.
17	269	149	279	205	183	238	264	143	340	358	10	292	309	58	315	301	271	208	214	194	238	176	161	229	245.
18	139	173	216	166	105	150	153	143	102	97	96	211	212	206	215	278	261	196	212	203	188	199	163	250	182.
19	165	168	205	231	184	212	190	165	257	257	292	301	301	349	1	12	13	314	229	237	232	237	200	32	245.
20	240	227	190	186	211	201	150	210	73	86	34	343	325	358	14	5	280	226	220	196	185	183	124	148	198.
21	123	122	122	138	137	86	124	120	83	131	198	197	208	187	220	213	224	216	153	147	219	206	197	122	163.
22	191	197	221	215	197	173	215	241	120	65	66	24		346	351	334	51	130	199	208	229	162	163	226	188.
23	173	181	143	86	102	86	80	91	71	148	177	198	191	199	211	200	154	166	200	204	199	198	189	196	165.
24	198	196	203	219	308	128	264	251	254	275	298	319	322	339	349	358	360	358	301	251	229	175	202	216	267.
25	192	206	128	209	203	36	146	199	125	72	163	68	29	89	186	208	196	203	144	183	144	155	131	148	156.
26	109	163	145	60	89	88	90	84	59	141	200	215	190	204	193	202	192	179	138	113	104	104	120	116	134.
27	130	152	179	158	161	195	189	192	204	206	220	286	288	286	317	349	324	351	226	18	291	257	208	182	226.
28	212	225	210	176	133	200	188	199	141	133	303	300	16	204			198	199	118	64	71	78	48	99	160.
29	104	97	123	177	106	55	97	71	75	97	181	215	191	176	205	200	197	200	75	93	114	99	104	90	128.
30	98	121	122	111	195	157	182	168	101	203	204	287	284	299	330	303	307	278	216	89	217	209	191	179	197.
31	135	226	158	141	157	144	175	189	171	196	209	206	208	208	213	215	209	207	197	187	181	194	190	189	188.
MEAN	173.	184.	172.	163.	167.	165.	160.	154.	115.	115.	297.	274.	274.	257.	283.	264.	251.	207.	193.	177.	188.	176.	170.	184.	

TOTAL NUMBER OF OBSERVATIONS = 8644 MEAN = 186.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION AT 30 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	10	282	284	291	287	269	211	193	77	33	82	115	15	266	11	34	271	191	174	170	164	96	119	126	176.
2	196	116	162	89	129	165	125	130	65	86	323	249	220	213	205	206	201	190	95	105	128	125	107	86	146.
3	106	128	132	111	145	80	98	120	86	70	73	221	247	172	17	355	272	213	97	91	59	178	182	166	123.
4	173	228	203	203	173	213	157	115	119	70	27	252	211	196	177	203	229	196	197	161	283	286	206	248	198.
5	246	273	278	272	234	271	133	179	278	292	320	327	320	323	330	332	311	285	277	213	226	218	183	221	269.
6	251	199	162	156	199	207	249	145	177	276	276	10	339	50	61	179	172	171	174	185	178	175	129	187	185.
7	191	167	170	158	79	118	141	74	148	106	208	204	205	207	206	191	182	190	191	200	166	140	198	186	171.
8	153	123	198	333	74	74	61	100	92	166	179	188	197	189	200	195	176	148	164	160	187	185	176	136	158.
9	171	200	176	153	182	178	168	91	47	184	195	212	230	226	216	233	228	258	299	291	269	273	346	321	219.
10	332	323	305	301	307	290	277	272	227	275	299	323	309		357	340	6	146	200	200	197	283	111	204	286.
11	206	207	252	103	225	250	130	181	226	239	330	292	294	295	237	175	315	252	237	227	131	122	149	218	224.
12	238	247	154	138	273	235	215	79	222	44	7	314	297	278	329	305	277	237	216	122	207	213	219	155	238.
13	160	176	112	131	139	135	141	170	128	155	192	196	215	212	209	214	171	162	140	116	121	106	119	155	157.
14	115	68	89	116	148	191	343	218	94	88	68	325	344	281	4	4	348	153	218	167	220	192	253	244	143.
15	182	166	55	162	184	218	206	76	153	119	349	300	307	345	358	314	300	239	201	178	130	156	203	208	197.
16	167	154	158	213	142	231	230	131	114	83	15	356	358	355	342	301	263	234	238	198	194	45	238	310	219.
17	330	95	303	212	154	197	296	142	292	301	8	298	298	306	307	295	272	218	208	190	272	186	128	240	258.
18	279	171	172	168	122	146	154	140	103	99	88	208	211	205	214	273	261	195	198	182	186	182	185	283	183.
19	146	145	219	241	208	210	136	189	209	258	280	296	292	334	7	14	12	324	236	253	238	237	210	10	247.
20	312	180	182	168	267	189	42	184	76	89	36	345	314	286	25	332	276	234	219	187	164	195	123	151	202.
21	125	133	125	145	138	98	122	124	88	137	198	198	208	186	216	214	224	208	209	139	207	188	202	95	165.
22	151	187	230	199	200	184	230	246	129	75	70	126	343		345	323	74	89	202	170	223	169	124	215	173.
23	179	170	137	96	110	98	107	113	84	155	194	198	190	209	212	201	175	173	202	206	199	196	187	197	169.
24	198	197	202	213	286	156	276	255	253	274	297	312	324	339	346	345	360	360	301	254	247	104	171	175	268.
25	157	256	116	192	183	174	130	190	139	91	182	47	35	92	191	210	197	201	152	184	151	160	132	149	160.
26	125	164	118	81	99	95	110	102	68	159	202	215	193	207	195	203	191	181	142	134	112	115	122	114	143.
27	155	155	182	164	165	196	192	194	206	207	219	288	287	287	312	342	328	335	265	12	301	267	216	194	235.
28	203	206	203	184	130	176	163	191	143	145	24	199	7	209			199	197	149	105	79	92	62	107	156.
29	117	126	159	183	131	92	128	97	92	94	183	212	198	177	206	202	199	200	90	110	126	111	122	118	144.
30	127	160	145	130	196	173	187	181	125	205	206	288	286	299	324	308	304	290	220	264	215	214	167	149	209.
31	129	224	182	116	143	159	184	193	186	199	209	207	211	210	215	214	212	210	199	194	186	197	200	193	192.
MEAN	172.	177.	174.	164.	168.	177.	162.	153.	130.	132.	271.	258.	275.	247.	282.	267.	249.	208.	198.	177.	187.	174.	167.	178.	

TOTAL NUMBER OF OBSERVATIONS = 8670 MEAN = 187.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION AT 100 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	11	291	298	292	300	309	236	211	179	51	92	124	32	360	359	30	297	182	199	142	163	91	133	71	23.
2	180	129	179	123	140	151	129	178	62	102	351	250	223	217	208	207	200	194	122	113	129	130	144	111	156.
3	140	152	139	135	176	110	103	148	146	127	103	223	222	46	352	360	288	214	114	68	344	256	225	182	148.
4	91	227	247	211	241	212	173	130	114	83	28	297	218	200	182	209	233	206	203	164	300	307	251	253	212.
5	262	301	298	289	249	279	161	203	289	308	330	341	331	329	338	343	325	333	351	82	268	246	172	201	295.
6	285	199	335	100	167	170	255	191	190	286	299	10	22	35	66	177	171	174	179	195	196	181	153	193	189.
7	193	170	177	167	109	142	173	111	171	123	211	210	209	211	209	195	185	193	194	196	175	173	200	193	180.
8	175	160	195	188	159	153	167	165	152	170	181	192	201	192	203	198	181	153	166	177	198	187	179	147	177.
9	179	204	181	167	186	184	178	120	117	189	199	216	235	231	219	237	233	272	310	304	284	292	316	330	221.
10	334	329	316	312	317	311	302	295	246	282	305	331	346	356	2	349	6	45	125	186	160	308	77	147	326.
11	185	83	279	131	15	254	176	74	222	219	41	297	299	300	270	158	335	339	263	263	124	113	130	136	224.
12	236	272	208	95	65	89	219	30	124	158	13	320	303	304	343	310	291	275	251	156	105	195	261	128	254.
13	148	205	49	106	134	135	135	156	151	168	195	204	217	216	213	217	174	164	154	153	156	107	140	164	163.
14	189	144	104	121	162	182	261	209	40	98	54	319	334	300	340	11	354	54	254	106	173	24	16	276	49.
15	210	179	121	156	165	208	244	101	22	151	357	307	311		352	326	311	289	209	154	80	359	169	161	199.
16	188	153	183	135	169	122	315	118	104	95	35	11	2	360	352	322	289	262	288	238	215	14	290	296	304.
17	296	114	2	303	113	103	299	41	34	200	12	306	318	314	312	301	285	268	178	271	340	222	86	248	310.
18	191	176	178	165	146	140	155	140	111	98	148	214	216	210	217	280	292	207	197	181	191	171	224	358	183.
19	68	75	46	262	254	221	29	40	85	285	281	298	297	334	8	13	16	360	255	292	304	278	254	273	320.
20	34	96	267	80	354	216	357	294	87	109	42	1	332	317	8	359	296	266	240	248	142	149	125	157	1.
21	138	142	128	142	145	110	103	139	103	154	203	203	211	202	224	219	229	211	217	91	177	225	262	100	170.
22	120	109	223	186	213	189	176	293	129	105	81	29	342		354	326	66	334	253	118	143	205	108	195	147.
23	202	160	135	98	141	138	144	138	121	182	186	202	193	217	216	206	199	187	208	209	204	201	192	200	180.
24	202	201	206	212	273	197	281	279	263	283	302	338	324	349	2	347	3	360	307	272	309	44	118	156	291.
25	182	356	152	171	176	147	92	184	162	127	186	38	53	86	198	213	200	202	172	184	165	171	144	154	161.
26	171	177	160	126	137	118	148	132	117	171	204	220	197	211	199	207	195	186	162	161	131	136	158	128	165.
27	151	167	189	177	182	201	198	200	210	212	224	288	293	293	312	332	335	353	194	11	325	292	249	234	242.
28	217	219	217	217	295	136	123	174	168	139	135	249	15	212			204	198	177	196	118	126	106	129	175.
29	140	172	185	196	188	175	191	168	134	105	188	217	200	183	211	206	202	201	132	133	147	140	156	154	172.
30	165	186	174	150	108	187	194	194	162	210	210	291	290	305	332	316	311	298	233	310	257	269	14	59	239.
31	104	170	95	60	108	175	192	200	191	204	213	210	215	215	218	216	215	215	204	204	194	204	196	197	191.
MEAN	176.	170.	185.	158.	173.	169.	182.	160.	139.	156.	188.	275.	280.	270.	289.	275.	263.	234.	205.	180.	181.	193.	170.	172.	

TOTAL NUMBER OF OBSERVATIONS = 8701 MEAN = 192.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND DIRECTION AT 200 FEET
TRAILER NO. • 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	11	300	302	303	315	333	259	236	242	283	92	123	23	26	9	24	294	176	216	143	169	214	121	21	305,
2	74	137	198	343	118	154	183	354	30	116	349	250	227	220	212	210	205	202	139	130	148	145	190	182	171,
3	185	182	173	164	193	160	114	178	195	158	146	225	263	89	354	349	291	216	193	1	318	336	250	218	201,
4	144	153	280	212	208	332	178	143	125	93	28	307	217	202	185	210	234	213	206	170	302	306	242	250	211,
5	309	311	318	306	28	275	192	242	302	305	331	340	331	338	340	344	332	349	357	40	288	290	170	176	316,
6	282	141	325	74	141	121	283	219	187	284	322	13	42	14	61	173	173	181	193	204	199	190	178	199	187,
7	199	177	188	188	155	177	197	170	183	149	217	217	216	217	213	190	191	198	199	189	185	182	203	200	192,
8	194	196	199	199	186	201	199	196	193	179	185	195	205	196	206	200	188	166	177	187	202	192	185	188	192,
9	190	205	187	184	191	190	188	159	154	194	202	221	241	234	222	240	236	276	316	313	330	313	322	338	227,
10	342	332	324	316	324	324	320	313	267	287	310	325	273	360	344	346	8	34	86	159	139	275	87	112	332,
11	95	103	295	204	55	223	215	54	143	200	324	293	296	293	261	183	311	350	268	279	201	111	121	113	234,
12	105	282	244	100	54	92	213	213	125	214	119	324	307	318	319	308	294	302	285	214	128	181	233	155	236,
13	146	204	346	133	149	152	149	161	174	182	198	203	221	219	214	218	182	173	178	188	189	219	210	188	186,
14	202	202	161	152	215	202	93	228	16	120	41	9	335	314	347	352	10	42	277	143	126	354	58	303	25,
15	241	196	188	131	182	93	260	287	314	203	338	308	320	355	351	320	314	328	38	216	145	53	97	111	297,
16	229	147	201	74	133	58	345	261	105	97	62	35	3	358	349	343	349	270	302	269	47	32	13	307	10,
17	258	243	19	5	86	115	288	79	80	336	31	314	315	303	309	314	268	296	109	9	16	302	75	158	345,
18	197	192	185	168	183	161	157	148	116	77	200	218	219	213	220	290	328	214	203	209	187	190	319	275	199,
19	27	101	119	218	256	250	248	23	65	330	295	297	301	338	6	13	15	12	243	346	12	313	290	275	327,
20	202	159	302	89	134	256	321	344	174	114	52	347	299	23	13	340	300	275	248	227	165	143	126	156	240,
21	140	163	135	131	168	198	101	156	134	181	206	209	216	203	229	223	231	220	233	79	82	202	273	241	185,
22	111	120	125	139	194	23	48	337	153	121	98	61	353		343	331	47	340	284	137	105	170	182	183	99,
23	212	155	165	182	174	188	169	171	176	200	197	207	198	222	219	212	195	190	212	214	210	207	201	205	195,
24	208	207	211	212	234	216	281	321	270	291	304	339	323	349	2	359	2	1	312	288	331	28	98	163	299,
25	239	238	185	184	181	203	100	193	187	184	221	61	41	80	205	217	204	208	194	194	188	193	160	177	187,
26	196	194	183	188	165	151	189	199	195	189	210	222	201	214	204	211	200	194	186	186	157	164	183	145	188,
27	172	175	196	190	196	208	204	207	215	217	231	298	291	292	312	338	334	352	57	13	342	308	277	277	259,
28	243	238	243	241	272	144	144	173	192	175	178	205	342	224			209	208	206	202	189	193	194	166	203,
29	187	198	198	209	204	198	200	202	177	125	196	227	210	190	216	210	206	206	189	176	181	190	193	193	195,
30	194	198	196	179	205	205	204	203	203	217	214	297	291	306	332	318	312	295	248	330	297	316	50	89	251,
31	85	99	333	290	201	192	202	208	205	208	217	215	219	219	223	224	218	219	210	213	204	211	214	204	211,
MEAN	190.	185.	213.	180.	180.	184.	200.	204.	174.	184.	221.	275.	278.	278.	287.	279.	269.	246.	221.	201.	180.	220.	183.	191.	

TOTAL NUMBER OF OBSERVATIONS = 8730 MEAN = 212.

! INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 8 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	27	30	23		11	12	13	12	18	23	28	45	43		55	41	18	13	15	15	13	17	11	24	22.
2	19	14	13	15	10	13	11	9	12	17	49	18	19	18	13	13	13	14	18	11	12	9	13	12	15.
3	12	11	11	12	27	12	14	14	16	16	15	25	41	62	24	55	13	10	17	12	26	14	11	25	20.
4	19	16	21	10	13	21	15	12	12	14	37	42	15	15	16	13	15	14	12	13	30	13	31	22	19.
5	21	16	12	13	17	15	28	18	15	23	12		20	53	36		12	15	11	10	11	11	12	13	17.
6	15	12	18	12	19	16	14	13	13	18	32	37	35	46	40	36	10	11	12	29	37	19	14	14	22.
7	12	12	12	30	25	25	28	25	32	20	19	29	24	16	14	14	12	13	13	32	20	23	15	17	20.
8	33	25	29	39	19	15	23	14	23	24	14	15	15	14	15	14	15	31	36	29	15	12	11	25	21.
9	15	20	11	24	13	13	23	45	31	17	14	18	21	18	15	15	14	13	25	13	12	13	13	17	19.
10	29	15	13	13	13	13	13	13	14	14	16	35	34	46	45	46	46	18	10	11	17	15	17	15	20.
11	12	14	12	12	15	14	13	30	18	28	29	17	22	20	45	34	19	16	10	13	27	45	18	17	21.
12	23	13	11	24	21	10	11	16	11	19	31	22	18	26	38	30	11	11	9	19	22	14	14	17	18.
13	15	42	41	12	12	11	13	15	15	19	14	13	17	16	16	16	15	10	12	12	13	14	14	17	17.
14	17	11	14	12	12	21	15	19	17	19	31	63	49	43	33	31	15	14	12	12	11	13	12	11	20.
15	15	25	13	14	25	14	12	15	15	29	32	14	22	38		28	12	11	11	13	24	19	26	17	19.
16	15	27	18	16	25	11	19	20	18	19	31	12	15	19	16	11	12	14	11	13	13	17	11	23	17.
17	30	28	24	25	10	17	28	19	15	38	34	21	23		32	16	10	12	12	16	13	14	16	14	20.
18	28	23	28	23	18	14	14	12	16	17	35	21	23	20	16	15	12	15	11	14	13	11	13	23	18.
19	28	28	18	14	13	12	39	14	18	14	17	15	18	28	27	21	16	16	13	11	14	10	19	13	18.
20	29	14	29	13	18	12	16	14	12	14	22	43	42	37	43	24	13	12	10	12	15	27	15	12	20.
21	13	11	12	13	12	12	12	11	12	20	16	17	20	31	37	20	13	12	30	21	11	16	12	17	17.
22	15	17	14	24	15	21	23	18	15	13	19			64	55	22	14	26	12	18	13	15	19	15	20.
23	14	17	13	14	10	12	11	13	13	28	23	14	15	39	25	27	47	43	16	15	13	14	12	14	20.
24	13	12	14	21	34	29	30	12	12	15	15	17	32	38	29	37	39	29	12	12	22	34	14	14	22.
25	18	17	12	14	14	21	19	16	19	23	48	43	36	51	26	17	12	13	17	25	16	19	19	17	22.
26	17	15	25	14	11	11	12	17	16	42	24	15	20	20	15	13	13	11	15	26	14	11	36	24	18.
27	58	26	16	27	42	16	20	12	15	15	16	20	16	15	28		13	31	23	48	24	14	16	18	23.
28	11	11	13	22	20	11	18	20	18	30	38	46	45	37			13	17	30	29	11	17	20	15	22.
29	12	15	20	13	22	16	19	22	13	16	20	32	31	21	15	14	13	13	16	15	13	13	10	16	17.
30	32	24	15	10	12	32	19	23	15	16	14	25	15	20	36	26	14	12	11	17	10	11	22	28	19.
31	12	12	17	30	26	13	11	15	59	14	18	17	15	15	16	15	15	14	14	28	17	17	29	12	18.
MEAN	20.	19.	18.	18.	18.	16.	18.	18.	18.	21.	25.	25.	25.	29.	27.	23.	16.	16.	16.	19.	17.	17.	17.	18.	

TOTAL NUMBER OF OBSERVATIONS = 8320 MEAN = 19.

! INDICATES CALIBRATION DURING THE HOUR

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                 DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 30 FEET
                       TRAILER NO. - 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                  HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  MEAN
DAY

 1       17   24   12    9    8   12   11   13   11   25   26   37   45   58   46   40   22   11   26   12    9   15    9   15   21.
 2       12   11   12   14    9    9    8   13   11   13   33   18   16   15   12   11   11   12   33   10   10    8    8   11   14.
 3       10    9    8   11   20   11   11   16   15   16   14   18   48   53   43   24   17    9   13   11   21   13    9   19   17.
 4       15   14   22    9   13   15   12   10   11   11   35   42   13   14   13   11   10   11   10   11   22   13   27   17   16.
 5       16   13   10   10   14   13   31   13   15   14   10   18   11   11   14   14    9   22   13    8    9    8    9   15   14.
 6       15   10   17   11   13   30   12   10   11   14   22   35   36   39   47   33    7    9    8   18   30   16   12   11   19.
 7        9    8    8   29   20   23   28   16   27   19   14   22   20   12   11   11    9    9   10   20   17   27   11   12   17.
 8       24   21   22   39   23   19   27   16   26   19   12   12   12   11   12   12   11   22   30   24   13   10    9   26   19.
 9       13   19    9   22   10    9   17   45   33   13   12   14   16   14   12   11   11   13   19   10   10    9   11   12   16.
10       24   11   10   10   10    9   10   10   10   10   13   36   38        29   23   23   18    9    9   17   13   13   10   15.
11       10   18   11   10   13   13   11   26   16   22   38   13   17   15   39   29   10   14   10    8   20   40   14   17   18.
12       25   10   10   29   22   11    9   19    9   16   24   30   15   17   29   13   10   10    8   18   21   12   13   13   16.
13       13   41   20   11    9   10    9   10   11   17   12   11   13   13   13   14   12    7    7   11   12   15   14   11   14.
14       24   20   10    9    9   14   20   10   15   15   32   28   40   30   36   21   16   13   10   13   12   15   14   10   18.
15       12   18   17   14   13   13   11    9   23   23   20   13   18        56   15    9   10    8   11   18   19   16   16   16.
16       11   18   18   17   24   11   15   16   13   16   15    8    9   15   13    9   10    8   11   10   10   14   10   20   14.
17       22   20   17   14   18   17   17   16   22   27   32   15   16   17   26   12    8    9   10   10   12   10   14   16   17.
18       25   20   34   16   12   10    8   10   13   14   34   17   19   15   14   12    9   11    9   10   10    9   16   14   15.
19       15   21   11   11   17   17   20   15   22   11   13   12   14   29   30   28   12   14   11   11   15   10   17   15   16.
20       14   17   13   10   20   10   18   17   10   10   23   21   35   34   38   19    9    9    9    9    9   19   12   10   16.
21       10    9   10   10    9    9   11   10    9   16   13   13   17   29   29   15   11    9   33   16    7   15   12   13   14.
22        9   14   14   23   12   11   21   19   11   11   15        42        37   19   14   22   12   20   13   16   25   15   17.
23       11   13   10   12    8    9   10    9   10   23   19   13   12   37   19   25   42   32   13   13   11   11   10   10   16.
24       10   11   11   18   32   25   17    9    9   11   11   16   18   24   37        53   32   10   10   13   28   10    8   18.
25       15   20   11    9   11   22   23   14   14   17   41   56   47   44   25   14    9   10   18   17   15   17   16   13   21.
26       19   13   21   14   10    9   10   16   14   35   19   14   15   16   12   12   10    9   11   20   11    9   25   18   15.
27       44   22   13   21   36   13   16   10   12   12   12   16   12   12   21   30   10   16   30   42   14   11   16   15   19.
28        9    8   11   24   21    9   14   15   14   30   43   46   39   25             10   13   22   45   13   15   15   11   20.
29        9   16   15   11   21   26   25   30   15   13   18   24   24   17   13   11   11   11   17   15   11   11   10   15   16.
30       25   19   15   10   10   19   13   19   14   12   12   21   12   14   12   13   11   11    8   18    8    9    9   22   14.
31       10   12   20   36   27   10    9   13   38   12   15   13   12   14   13   12   11   11   11   25   14   14   23   10   17.
 MEAN   16.  16.  15.  16.  16.  14.  16.  16.  16.  17.  21.  21.  22.  23.  24.  18.  13.  14.  15.  15.  14.  15.  14.  14.

                      TOTAL NUMBER OF OBSERVATIONS =  8416     MEAN  =      17.

            ! INDICATES CALIBRATION DURING THE HOUR
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DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 100 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	18	17	14	10	9	19	14	10	21	19	20	34	35	52	25	19	16	9	12	10	8	20	9	17	18.
2	15	13	14	16	9	8	14	11	9	11	28	21	15	13	10	9	10	9	30	10	14	10	21	22	14.
3	15	10	10	11	13	17	7	15	26	23	12	16	36	56	28	34	12	9	22	20	23	19	10	20	19.
4	15	30	26	14	31	24	10	9	9	9	21	39	13	13	14	10	11	11	10	9	18	11	20	15	17.
5	21	12	11	12	30	15	28	15	25	20	8	5	6	21	16	16	9	36	24	25	11	8	12	16	17.
6	16	13	13	10	8	11	9	10	9	14	17	49	15	40	28	31	8	8	8	13	16	17	13	11	16.
7	10	8	9	25	26	21	26	31	22	21	14	19	17	12	11	10	9	10	10	27	16	30	10	11	17.
8	22	28	15	30	45	44	47	23	39	16	11	11	11	11	11	12	12	23	28	28	14	9	9	20	21.
9	13	25	8	19	9	10	15	46	37	13	11	13	15	14	10	11	11	19	10	10	12	10	10	11	15.
10	27	10	10	10	11	11	10	9	11	10	11	45		19	32	30	29	9	13	14	33	19	9	14	17.
11	16	14	10	15	27	11	10	14	35	27		12	14	15	38	41	12	15	10	10	19	29	11	25	19.
12	39	10	13	12	27	19	12	10	11	28	20	17	11	16	30	30	9	12	12	13	10	16	20	14	17.
13	9	31	17	11	9	9	9	10	13	14	11	11	13	12	12	14	11	9	11	14	16	30	34	10	15.
14	23	45	18	11	9	13	10	24	19	13	30	53	20	21	33	49	13	26	12	9	17	21	11	14	21.
15	10	21	26	9	18	28	9	13	15	29	24	11	20		28	13	10	13	22	23	13	23	18	20	18.
16	14	19	14	28	22	26	13	19	10	15	12	10	8	11	10	5	12	8	12	12	8	12	14	24	14.
17	13	13	9	15	17	15	13	12	30	18	30	14	20	15	15	21	9	11	18	20	12	18	11	18	16.
18	34	18	16	9	15	8	7	9	9	11	42	15	17	14	11	12	13	11	10	11	13	13	19	16	15.
19	24	15	20	11	11	10	17	28	15	12	13	13	13	19	26	10	8	9	12	12	18	13	12	24	16.
20	6	12	20	10	27	10	14	14	12	10	16	13	26	34	30	18	10	9	10	18	10	22	12	8	15.
21	9	11	10	11	11	16	15	10	10	16	12	12	15	20	25	12	9	7	26	15	24	20	16	10	15.
22	8	18	34	27	17	11	17	21	9	8	14	41	32		32	12	8	12	13	14	27	25	22	14	19.
23	11	16	9	39	11	17	11	10	16	21	21	11	12	36	16	21	39	26	13	11	11	10	10	9	17.
24	10	10	10	14	30	22	16	11	9	10	10	26	13	26	29	18	48	19	11	9	20	13	11	11	16.
25	15	16	11	11	13	36	22	16	14	28	36	32	32	37	22	11	9	10	16	14	16	16	19	15	20.
26	19	16	28	26	15	11	20	21	36	33	20	12	13	15	11	10	9	9	14	17	11	11	27	16	18.
27	44	20	12	19	27	12	14	10	11	11	11	14	13	10	20	18	11	38		15	22	12	17	15	17.
28	9	8	8	11	25	8	14	25	10	32	30	42	37	23			10	10	32	28	33	31	35	18	22.
29	15	16	10	10	18	28	32	40	25	11	15	24	19	15	11	10	10	9	24	22	14	18	14	20	18.
30	26	13	12	11	9	22	11	12	16	11	11	20	11	11	11	11	10	10	10	13	11	14	6	9	13.
31	9	28	20	26	35	10	10	11	24	11	14	12	11	12	11	11	11	11	10	18	14	12	22	9	15.
MEAN	17.	18.	15.	16.	19.	17.	16.	17.	18.	17.	18.	21.	18.	21.	20.	18.	13.	14.	16.	16.	17.	17.	16.	16.	

TOTAL NUMBER OF OBSERVATIONS = 8391 MEAN = 17.

I INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 200 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	16	17	28	10	10	15	23	11	9	25	25	32	35	52	45	21	12	6	13	10	9	12	25	10	19.
2	15	16	12	12	9	8	26	26	11	11	34	22	13	11	9	9	8	8	32	17	25	25	19	29	17.
3	17	12	17	17	12	30	12	13	19	16	14	15	32	49	33	29	17	8	30	25	23	16	8	16	20.
4	20	14	21	21	26	26	12	10	8	9	29	33	12	11	13	9	9	9	10	9	15	9	19	14	16.
5	21	9	9	14	25	13	23	20	25	14	7	4	5	5	5	4	3	4	4	8	10	10	22	11	12.
6	23	17	33	11	11	10	11	10	10	14	22	40	40	42	27	28	8	8	8	9	10	21	12	8	18.
7	9	7	8	20	41	25	15	35	21	20	15	16	15	12	10	14	7	9	10	27	17	27	9	9	17.
8	17	22	11	17	31	25	16	15	29	16	11	10	11	10	11	11	11	25	30	22	12	9	8	24	17.
9	12	12	8	14	9	10	14	38	47	12	11	13	15	12	10	9	10	20	9	10	19	11	8	11	15.
10	36	11	11	10	10	10	11	11	12	11	11	35		23		24	15	6	10	11	23	20	20	10	15.
11	21	9	17	12	15	14	9	16	20	33	45	14	14	16	33	37	13	8	9	11	23	24	12	10	18.
12	50	16	12	11	11	9	18	19	10	10	46	18	11	14	35	12	7	9	12	11	8	17	17	13	16.
13	12	29	27	14	10	10	9	17	13	12	11	11	12	11	11	13	11	10	9	11	11	41	24	11	15.
14	10	20	38	17	11	10	23	19	23	13	22		42	21	38		31	11	13	10	12	17	14	15	20.
15	12	9	17	18	13	16	12	20	17	20	23	11	21		17	13	10	9	8	14	13	18	12	16	15.
16	21	11	17	26	24	23	11	13	15	12	10	10	10	11	10	3	17	9	9	10	14	10	21	20	15.
17	10	18	24	21	17	9	20	10	10	33	20	22	22	15	20	11	11	8	14	17	23	31	10	18	17.
18	14	12	8	9	14	11	8	12	15	18	36	13	16	13	13	12	12	17	11	19	14	16	18	16	15.
19	25	13	13	26	11	11	14	14	9	18	14	12	12	21	20	10	8	22	22	55	39	15	13	10	17.
20	12	17	13	11	14	14	13	12	12	8	18	21	36	39	33	29	9	8	7	20	9	14	11	18	16.
21	13	14	16	24	14	20	17	11	28	17	11	11	13	19	21	11	8	8	25	11	11	14	12	17	16.
22	9	8	14	23	20	43	14	15	10	7	14	33	56		34	8	7	11	10	15	14	22	18	19	18.
23	12	13	19	40	13	21	10	13	19	17	22	11	12	33	14	20	31	24	11	10	9	10	10	10	17.
24	9	8	8	12	20	16	17	27	9	10	10	14	12	22	33	37	29	22	10	9	28	12	10	18	16.
25	11	29	18	12	9	16	12	10	12	17	41	41	27	47	26	10	8	8	11	12	16	13	16	14	18.
26	13	10	19	24	12	12	14	21	24	37	20	10	13	13	11	10	9	7	13	21	15	13	33	20	17.
27	42	22	11	15	19	10	12	10	9	9	11	14	12	10	11	27	9	26		17	21	10	14	13	15.
28	9	9	9	11	14	10	11	13	15	15	39	42	45	19			8	7	14	11	21	36	43	22	19.
29	14	11	10	9	10	16	16	17	22	12	15	25	17	16	12	9	8	8	32	28	18	24	13	18	16.
30	20	10	11	13	8	13	8	9	13	10	9	18	12	10	11	11	9	11	11	10	9	11	13	11	12.
31	8	14	34	36	21	11	10	10	18	11	12	10	10	12	12	11	9	10	9	12	13	11	15	10	14.
MEAN	17.	15.	17.	17.	16.	16.	15.	16.	17.	16.	20.	19.	19.	19.	19.	15.	12.	12.	14.	16.	16.	18.	16.	15.	

TOTAL NUMBER OF OBSERVATIONS = 8397 MEAN = 16.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 30 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
												HOUR													
1	19	21	13	10	9	11	9	12	13	15	24	37	30	68	38	26	15	11	21	12	9	13	8	15	19.
2	10	11	12	15	10	9	9	13	11	13	34	19	17	14	11	11	11	11	29	9	10	8	9	12	14.
3	10	9	8	10	18	12	11	17	15	16	12	19	42	52	33	18	15	8	14	12	31	12	9	18	18.
4	14	15	23	10	14	15	12	10	11	12	19	32	13	13	14	11	11	11	10	11	15	16	28	18	15.
5	22	14	10	11	13	22	26	15	23	21	8	7	8	50	46	15	10	21	10	10	9	8	10	15	16.
6	13	10	14	9	13	17	11	11	9	12	24	31	42	37	42	26	9	8	8	22	29	15	12	11	18.
7	10	9	8	24	16	23	29	16	27	19	10	5	27	13	11	12	9	9	11	19	17	24	11	12	16.
8	24	21	26	38	23	20	34	17	27	20	11	13	12	12	12	11	12	22	34	25	13	10	9	25	20.
9	12	28	10	22	11	11	18	45	23	14	13	14	17	14	12	12	10	25	19	15	16	10	26		18.
10	15	29	16	9	19	10	11	10	11	11	12	31	50		12	17	13	18	11	10	31	22	10	11	17.
11	11	21	11	11	13	13	11	25	13	22	15	11	22	25	40	29	13	13	9	10	20	38	15	21	18.
12	29	11	11	10	17	11	9	16	12	12	22	28	14	23	57	17	11	11	10	23	14	14	14	13	16.
13	15	26	17	12	9	11	10	10	11	18	12	12	15	12	14	13	13	9	8	9	11	14	17	11	13.
14	16	11	6	6	10	18	13	10	13	8	27	36	22	36	40	12	9	12	10	13	11	18	22	13	16.
15	9	19	15	12	16	19	12	8	12	12		29	14		24	29	11	9	10	13	16	17	19	12	15.
16	12	21	13	16	14	11	12	18	11	15	9	8	9	14	11	4	8	9	12	9	8	15	10	12	12.
17	15	15	10	16	14	15	25	11	14	24	24		30		26	14	8	10	8	10	13	13	12	16	16.
18	28	22	20	17	13	11	8	9	10	8	35	17	19	15	13	12	9	13	9	10	10	10	13	25	15.
19	13	15	13	10	15	15	12	14	13	10	12	12	14	25	37	20	15	17	11	11	16	10	17	9	15.
20	8	8	12	11	13	10	8	14	7	5	15	20	26	42	25	19	9	10	9	12	9	19	8	9	13.
21	9	9	10	11	10	8	10	9	7	15	13	13	18	30	38	16	10	9	35	17	9	17	13	8	15.
22	10	17	17	28	13	12	29	14	11	10	15	29	36	19	18	17		14	15	13	11	12	16	17	17.
23	12	16	10	15	10	10	11	9	11	22	22	13	13	43	19	25	52	36	13	13	11	11	11	9	17.
24	10	11	11	18	27	25	16	9	8	12	11	15	25	21	32	29	32	38	15	10	14	19	12	9	18.
25	10	25	11	11	10	21	16	15	15	15	38	46	37	37	27	14	10	10	15	19	16	18	17	14	20.
26	20	14	22	15	11	9	11	17	15	39	20	13	15	17	13	12	11	9	12	19	12	10	28	17	16.
27	45	21	12	21	38	14	16	10	11	13	12	16	13	12	22	36	10	16	32	30	11	12	15	17	19.
28	8	7	11	16	15	9	17	15	14	24	43	36	45	25			10	13	25	42	13	15	15	11	20.
29	9	15	14	11	21	27	25	31	15	14	17	31	25	18	13	11	10	10	17	16	11	11	10	15	17.
30	26	20	15	10	11	20	12	21	14	13	12	20		22	52	26	18		10	13	8	10	15	22	18.
31	10	13	18	21	27	10	9	13	42	12	14	13	12	13	12	12	11	10	11	24	14	14	24	11	16.
MEAN	16.	17.	14.	15.	16.	15.	15.	15.	15.	16.	19.	20.	23.	25.	25.	17.	13.	14.	15.	16.	15.	15.	15.	15.	

TOTAL NUMBER OF OBSERVATIONS = 8392 MEAN = 16.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 100 FEET
TRAILER NO, = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	20	23	14	10	11	14	20	11	23	20	23	30	55	30	41	31	18	8	12	10	8	16	8	16	19.
2	15	12	14	16	8	8	13	11	9	11	27	21	14	12	11	10	10	10	15	11	14	8	24	23	14.
3	14	10	9	11	13	17	8	14	22	23	11	16	35	54	23	15	8	8	21	18	29	22	10	18	18.
4	15	18	16	13	24	26	11	9	8	9	23	36	12	12	13	11	10	11	10	11	14	10	18	16	15.
5	18	12	10	12	21	21	28	15	14	12	10	10	10	10	11	10	9	12	11	18	12	10	12	12	14.
6	16	14	13	10	9	10	10	9	8	13	20	16	34	35	32	20	7	7	9	13	15	17	14	10	15.
7	10	8	10	22	24	21	27	29	21	20	14	17	17	12	11	10	9	10	12	25	18	29	18	13	17.
8	23	34	21	40	50	39	42	24	35	16	11	11	12	11	12	12	12	22	27	23	14	8	8	24	22.
9	13	27	9	19	9	9	14	47	44	13	12	12	15	13	10	11	10	12	11	9	11	9	11	10	15.
10	10	10	11	11	10	10	11	10	11	9	10	16	16	46	32	11	9	7	10	13	23	23	11	15	14.
11	20	15	11	13	16	11	11	11	23	21	29	11	13	16	33	33	17	10	9	10	21	30	12	27	18.
12	34	10	12	11	20	14	10	9	12	18	31	12	12	13	14	11	8	12	12	11	8	17	15	12	15.
13	9	18	13	10	8	6	9	9	12	13	11	10	12	11	11	13	11	9	10	14	15	24	20	10	13.
14	22	42	17	11	10	12	14	19	16	12	25	18	24	18	23	12	17	19	12	9	12	11	10	13	17.
15	10	21	18	10	19	27	10	11	8	28	13	11	11	18	27	11	10	13	14	11	14	19	17	19	15.
16	15	26	15	20	16	13	16	16	10	14	13	10	8	10	10	9	14	8	13	8	14	10	13	18	14.
17	13	16	10	15	16	13	11	8	6	15	20	12	12	13	14	11	8	12	14	16	13	12	13	20	14.
18	31	15	14	9	14	8	7	8	10	10	37	14	10	14	12	12	11	13	9	10	13	10	18	15	14.
19	27	15	19	11	10	9	17	19	14	12	12	12	11	12	25	18	21	17	11	13	17	13	13	16	15.
20	12	13	16	7	12	9	13	11	9	10	25	44	16	21	46	10	9	9	10	10	13	11	9	8	15.
21	8	12	9	12	10	14	12	9	10	16	11	12	15	24	25	12	9	8	24	13	27	16	15	10	14.
22	8	10	29	28	16	12	12	17	9	8	14		18	14	20	19	10	11	11	12	16	25	15	17	16.
23	12	11	9	38	12	17	11	10	16	21	23	11	13	36	16	20	36	25	12	11	10	10	10	10	17.
24	11	10	10	14	32	21	16	9	8	11	10	19	10	18	39	12	9	21	9	10	14	11	9	10	14.
25	16	12	13	11	12	25	12	11	13	27	39	40	34	36	22	11	9	10	16	15	15	16	18	15	19.
26	19	17	23	26	14	11	18	22	34	36	19	11	13	14	12	10	11	8	14	18	11	12	27	17	18.
27	36	21	13	18	30	12	16	10	10	11	11	15	12	11	10	11	9	16	22	38	10	10	15	14	16.
28	9	8	8	11	21	10	11	15	11	30	35	50	53	22			10	9	30	25	35	33	38	16	22.
29	14	16	9	9	17	27	28	38	19	12	15	23	18	14	12	10	10	9	24	22	13	17	14	17	17.
30	27	11	12	12	8	20	10	11	18	11	10	13	11	12	9	11	11	10	10	13	11	11	13	11	13.
31	8	25	13	24	25	10	9	11	22	12	14	11	11	11	11	11	10	10	10	10	17	13	12	21	11	14.
MEAN	17.	17.	14.	16.	17.	16.	15.	15.	16.	16.	19.	16.	18.	19.	19.	14.	12.	12.	14.	15.	16.	16.	16.	15.	

TOTAL NUMBER OF OBSERVATIONS = 8537 MEAN = 16.

* INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 200 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	24	15	15	10	10	11	18	11	9	23	19	27	44	26	38	46	15	8	10	9	7	16	18	12	17.
2	14	12	11	11	8	9	21	14	12	10	31	18	12	11	9	7	9	8	35	14	21	22	16	24	15.
3	15	11	14	15	10	25	12	12	16	14	12	13	29	40	24	21	11	7	27	27	19	16	8	22	18.
4	20	19	23	15	20	21	10	10	7	9	30	36	10	10	12	8	9	9	8	9	15	10	17	12	15.
5	15	9	11	13	22	18	13	23	21	14	11	9	10	9	10	9	9	11	27	16	10	8	14	9	14.
6	18	14	19	10	11	8	10	13	11	14	18	29	23	51	29	22	7	8	8	10	11	21	12	20	17.
7	43	29	10	32	31	20	12	29	20	16	13	13	13	10	9	10	8	8	9	24	16	23	9	8	18.
8	14	20	10	30	23	19	14	14	23	15	10	10	10	9	9	11	11	21	25	20	13	34	42	33	19.
9	11	14	8	15	12	9	12	36	36	10	10	11	13	13	9	9	9	10	10	9	10	11	9	10	13.
10	11	11	9	11	9	10	11	10	12	11	11	15	18	43	15	10	8	6	8	11	23	22	18	10	13.
11	15	17	17	10	11	13	8	14	13	27	33	13	12	14	31	23	14	17	9	10	17	23	10	10	16.
12	30	15	11	8	10	9	13	14	9	9	23	12	11	13	14	10	8	10	11	10	7	15	12	11	13.
13	11	19	34	12	8	10	9	13	11	11	9	11	11	10	10	12	10	9	8	10	10	24	21	10	13.
14	9	17	36	14	11	10	16	19	13	11	19	22	20	19	21	20	9	10	12	9	10	14	13	16	16.
15	12	10	16	10	14	14	10	24	16	16	16	11	10	13	22	12	9	9	18	14	13	10	10	16	14.
16	14	11	14	19	21	33	12	14	12	16	10	9	10	11	10	7	41	9	8	8	11	10	25	18	15.
17	9	10	10	19	16	7	21	9	9	7	13	13	15	15	13	11	12	9	13	18	21	24	9	19	14.
18	11	11	9	9	13	10	7	11	12	19	27	12	20	11	9	12	18	16	9	15	13	12	20	14	14.
19	22	12	13	21	11	12	13	15	9	11	16	11	11	16	26	15	18	21	21	24	13	11	12	9	15.
20	11	9	15	11	9	10	19	27	9	7	18	33	19	20	39	12	10	8	9	12	9	12	10	15	14.
21	11	12	14	24	12	20	12	11	24	16	9	10	12	16	18	10	8	8	18	11	11	16	12	11	14.
22	8	7	15	18	16	26	14	17	10	7	12	28	12	13	13	24	8	12	12	12	11	13	14	18	14.
23	11	12	16	31	11	14	9	12	17	16	20	15	19	24	13	17	32	21	14	23	6	9	10	9	16.
24	9	9	9	10	22	15	15	12	9	10	10	19	11	11		11	9	9	10	9	11	12	11	15	12.
25	10	25	13	11	7	15	12	10	12	23	27	43	36	38	21	9	8	8	11	11	14	11	15	14	17.
26	12	10	16	21	11	12	13	16	21	28	18	11	12	12	10	9	9	8	11	17	13	11	30	19	15.
27	30	20	11	14	16	10	12	9	9	9	10	14	11	10	10	10	9	28	26	37	10	10	13	13	14.
28	9	8	9	9	10	10	9	11	12	12	41	33	36	17			8	7	14	11	17	30	31	19	16.
29	13	11	9	9	9	14	14	14	19	10	14	19	15	15	11	9	9	8	23	25	17	21	11	15	14.
30	18	9	11	12	8	12	9	9	11	9	9	17	11	10	10	10	10	10	10	10	9	12	9	9	11.
31	7	11	29	35	20	10	10	11	15	10	13	9	11	11	11	10	10	10	9	13	11	10	20	8	13.
MEAN	15.	14.	15.	16.	14.	14.	13.	15.	14.	14.	17.	18'.	16.	17.	16.	14.	12.	11.	15.	15.	13.	16.	16.	15.	

TOTAL NUMBER OF OBSERVATIONS = 8510 MEAN = 15.

' INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF RELATIVE HUMIDITY AT 8 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	83	78	78	83	84	85	85	85	83	78	73	65	57	56	54	52	52	57	59	60	55	55	53	53	68.
2	52	54	54	54	55	54	54	55	53	48	43	40	38	38	38	38	40	43	46	47	47	48	49	50	48.
3	50	49	49	49	49	49	49	49	49	48	45	42	40	38	35	35	37	45	48	49	48	49	49	49	46.
4	51	53	54	55	55	56	53	53	52	48	44	41	40	40	40	39	40	43	52	50	51	53	56	56	49.
5	58	59	59	57	61	75	86	88	89	88	89	87	83	78	76	75	77	81	84	87	87	87	88	86	79.
6	87	86	86	85	86	87	88	88	88	87	83	76	71	66	61	60	62	67	69	70	68	65	67	65	76.
7	63	64	64	63	64	63	64	68	63	60	57	56	54	53	51	52	54	55	56	56	56	57	57	58	59.
8	59	61	59	59	62	62	62	64	60	53	51	48	47	47	47	48	50	52	52	55	55	52	50	49	55.
9	48	48	51	51	49	49	48	49	48	43	38	37	35	32	32	33	34	37	46	59	68	72	76	86	49.
10	87	86	88	87	88	86	86	86	85	82	82	79	76	71	66	62	61	64	72	74	75	77	77	74	79.
11	73	70	70	66	66	67	67	66	69	63	62	54	50	47	45	44	45	50	57	59	59	61	62	62	60.
12	64	67	65	63	65	68	68	66	65	61	55	48	44	42	40	40	42	48	53	52	53	55	56	53	56.
13	52	53	54	52	52	51	49	50	48	43	38	36	36	35	34	35	37	40	43	45	45	46	46	47	45.
14	50	51	50	50	49	49	51	54	53	49	43	39	36	34	33	33	34	37	42	42	45	45	46	48	45.
15	50	50	52	53	53	53	54	55	53	48	45	41	39	37	36	36	38	41	44	46	46	48	49	49	47.
16	47	43	42	43	43	44	48	47	43	41	39	36	34	30	29	32	33	36	37	38	38	40	42	42	40.
17	43	43	42	44	44	43	45	44	42	41	38	36	34	33	32	32	33	35	34	36	37	37	35	35	39.
18	34	34	37	36	37	37	35	36	37	36	33	30	30	30	32	33	34	34	37	39	39	38	39	40	36.
19	40	42	43	47	49	46	45	47	47	47	44	44	43	42	41	40	40	44	49	53	58	62	67	66	48.
20	68	69	72	74	75	77	77	77	77	70	59	50	43	38	35	34	35	39	42	41	39	34	31	30	54.
21	31	33	38	40	41	42	42	43	42	39	39	41	41	40	40	36	36	39	41	42	45	48	50	49	41.
22	49	48	49	49	50	50	49	50	48	46	44	38	34	37	37	38	40	42	45	45	47	49	49	49	46.
23	47	45	44	46	47	47	47	46	45	43	39	37	38	38	38	39	40	41	41	41	42	43	43	42	43.
24	42	42	42	43	43	44	48	48	47	47	48	48	48	47	46	45	49	56	64	76	77	77	79	79	54.
25	82	82	82	82	80	77	77	75	71	69	57	51	48	45	44	45	48	51	53	52	52	52	49	52	62.
26	53	53	52	54	55	54	55	56	55	50	47	45	44	44	43	44	46	49	52	54	54	55	53	53	51.
27	53	52	51	51	50	50	49	48	48	46	44	43	41	40	38	42	44	45	47	50	52	53	55	56	48.
28	59	62	64	64	63	64	65	65	63	55	49	42	39	39			43	45	47	49	50	49	49	48	54.
29	49	49	48	47	47	48	48	48	49	45	39	36	35	35	35	34	36	37	38	38	38	38	38	38	42.
30	39	39	39	39	39	39	39	39	40	39	38	39	40	42	45	47	50	53	54	55	59	62	63	64	46.
31	64	65	66	64	60	61	64	68	69	69	68	67	65	62	62	64	65	67	68	69	71	72	71	72	67.
MEAN	56.	56.	57.	57.	57.	58.	58.	59.	58.	55.	51.	48.	46.	44.	43.	43.	45.	48.	51.	53.	54.	55.	55.	55.	

TOTAL NUMBER OF OBSERVATIONS = 8836 MEAN = 53.

* INDICATES CALIBRATION DURING THE HOUR

CORPORATION

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                 DIURNAL VARIATION OF RELATIVE HUMIDITY AT 30 FEET
                  TRAILER NO. - 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                 HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

   1      90  84  85  88  90  90  91  91  89  85  80  73  65  64  61  58  58  60  63  63  58  57  56  55   74.
   2      54  57  56  57  58  58  57  58  57  54  49  46  45  44  44  44  45  48  50  51  50  51  53  54   52.
   3      54  52  52  52  52  52  53  52  53  52  50  48  46  44  41  40  42  47  51  51  51  51  52  52   50.
   4      53  54  55  57  57  58  56  56  56  54  50  48  46  46  46  45  46  48  56  54  55  57  60  60   53.
   5      61  62  62  62  65  79  92  95  96  96  96  94  90  86  84  83  83  87  89  91  92  93  93  92   85.
   6      93  92  92  90  90  92  94  95  95  94  90  83  79  74  67  68  68  72  74  75  73  72  72  71   82.
   7      70  70  71  70  70  70  70  72  70  68  65                                                     70.
   8
   9
  10
  11
  12
  13
  14
  15
  16
  17
  18
  19
  20
  21                                                                  30  36  37  39  39  41  43  43   39.
  22      41  40  42  41  43  43  42  38                                  38  39  40  41  43  43  43   42.
  23      40  38  38  39  40  41  40  39  38                          36  37  37  36  37  38  38  38   39.
  24      38  38  38  39  38  40  45  44  40  35                      45  52  62  72  70  70  68  66   51.
  25      72  73  73  70  68  64  64  63  54  58                      43  46  47  46  46  45  43  45   57.
  26      45  46  47  47  48  48  49  49  49                      40  41  45  47  48  49  48  47  47   47.
  27      47  46  46  46  45  44  43  43  42  40                                                     45.
  28
  29
  30
  31
 MEAN    59. 58. 59. 59. 59. 60. 62. 62. 62. 65. 68. 65: 62. 64. 57. 56. 49. 51. 55: 56. 56. 56. 56. 56.

                   TOTAL NUMBER OF OBSERVATIONS =  3057    MEAN  =     58:

            : INDICATES CALIBRATION DURING THE HOUR
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DIURNAL VARIATION OF RELATIVE HUMIDITY AT 100 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	95	88	89	92	94	93	94	93	92	91	86	78	69	67	64	61	61	62	63	63	57	56	55	54	76.
2	54	57	56	56	58	58	57	57	56	55	51	47	46	45	45	45	46	48	51	51	51	51	52	53	52.
3	53	52	51	52	52	53	53	53	53	52	51	49	47	45	42	41	42	47	50	50	50	51	52	53	50.
4	54	54	55	57	57	57	55	56	56	55	52	49	47	47	47	47	47	49	58	56	57	59	62	62	54.
5	62	63	64	65	68	83	97	99	100	100	100	99	97	92	89	88	88	91	94	95	97	99	97	96	89.
6	98	97	96	94	94	96	99	100	100	100	97	90	85	79	75	73	72	73	75	76	76	75	75	74	87.
7	73	73	73	73	73	73	73	74	72	70	68	66	64	62	61	60	61	63	64	65	65	65	65	66	68.
8	67	67	66	66	67	67	68	68	66	62	59	57	56	56	55	56	57	59	59	61	60	58	56	55	62.
9	54	55	56	58	56	56	56	57	56	51	47	45	43	40	39	40	41	43	51	66	75	81	86	99	57.
10	99	99	100	100	100	99	98	98	98	97	95	93	90	85	79	74	72	72	73	75	79	82	83	78	89.
11	75	70	72	70	67	71	72	71	74	73	72	66	62	58	55	53	53	54	60	63	63	64	66	64	66.
12	65	69	70	69	68	70	69	70	67	67	64	58	53	51	48	48	49	51	53	55	55	57	58	56	60.
13	54	56	57	55	55	55	55	52	52	50	46	44	44	43	43	43	44	45	48	49	49	49	50	51	50.
14	51	53	53	53	53	52	55	55	56	56	51	47	44	42	40	40	41	42	45	47	48	50	50	52	49.
15	55	53	52	55	55	55	56	58	57	56	53	50	47	46	45	45	45	46	47	48	49	52	51	51	51.
16	49	46	45	46	46	47	49	51	48	46	45	43	40	37	34	37	38	40	41	43	43	44	45	46	44.
17	47	47	47	47	47	46	47	47	46	46	44	42	41	39	38	38	38	40	40	40	40	39	38	38	43.
18	39	39	39	40	39	40	39	40	41	41	39	37	37	37	38	39	39	39	40	41	42	42	42	45	40.
19	46	45	46	49	50	49	49	50	51	53	53	53	52	51	50	48	48	50	56	58	61	65	68	70	53.
20	72	74	76	77	79	79	79	80	79	75	69	61	54	48	44	42	43	44	45	47	44	38	37	36	60.
21	37	39	43	45	45	46	47	47	48	46	42	40	39	39	38	38	40	42	45	46	46	48	49	50	44.
22	48	47	48	48	49	50	50	51	49	48	48	42	41	41	41	41	44	45	46	47	48	49	50	49	47.
23	47	46	45	47	47	47	47	46	45	43	42	41	41	42	42	43	44	45	45	45	45	46	46	46	45.
24	46	46	46	47	46	47	53	52	52	52	53	54	54	54	52	51	54	61	70	81	80	79	77	75	58.
25	78	81	81	79	74	71	71	70	66	65	60	55	52	49	48	49	51	54	55	53	54	53	51	53	62.
26	55	55	55	55	55	56	56	57	56	53	50	49	48	48	47	47	48	51	53	54	54	54	54	54	53.
27	54	54	53	53	52	51	51	51	50	48	46	46	44	42	42	45	46	47	50	53	55	56	56	58	51.
28	59	60	62	63	64	63	63	63	59	55	51	45	43	42			46	48	49	50	49	48	47	47	54.
29	49	48	47	46	47	47	48	48	48	47	43	40	38	38	38	38	39	40	41	40	40	40	40	40	43.
30	41	41	40	41	41	41	42	42	42	42	42	42	45	47	50	53	56	59	60	61	62	64	66	67	50.
31	64	63	64	61	60	61	66	72	75	76	75	74	73	70	69	70	72	74	75	75	77	78	77	78	71.
MEAN	60.	60.	60.	60.	60.	61.	62.	62.	62.	61.	58.	55.	53.	51.	50.	50.	51.	53.	55.	57.	58.	58.	59.	59.	

TOTAL NUMBER OF OBSERVATIONS = 8844 MEAN = 57.

* INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARAITON OF RELATIVE HUMIDITY AT 200 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	94	86	86	88	89	88	89	90	88	87	82	73	65	64	60	57	58	58	57	58	50	49	47	47	72.
2	48	50	49	50	51	51	51	50	49	48	46	44	43	43	42	42	43	44	47	47	47	48	48	49	47.
3	49	48	48	48	48	48	49	49	48	48	47	46	44	43	40	39	40	44	46	46	47	47	49	49	47.
4	50	50	50	51	52	52	51	51	51	51	49	46	44	45	45	44	44	47	57	54	54	57	61	59	51.
5	58	59	59	61	67	84	96	99	100	100	100	99	96	90	87	86	85	87	90	91	93	95	95	91	86.
6	93	91	90	89	90	91	97	99	98	98	94	87	82	75	70	68	67	67	67	68	69	69	70	68	82.
7	67	67	67	67	68	67	67	69	66	65	62	61	59	58	56	56	56	58	59	61	60	61	60	61	63.
8	62	63	61	61	62	62	63	62	61	58	55	53	52	52	52	53	54	56	56	58	57	54	51	51	57.
9	50	50	52	53	52	52	51	52	51	46	42	40	39	36	35	37	38	40	50	65	74	80	87	99	53.
10	97	95	96	97	98	98	95	95	95	95	95	92	88	82	76	70	67	67	69	71	74	76	75	68	85.
11	65	60	60	60	58	60	63	62	68	66	67	61	57	54	51	49	49	50	56	58	58	58	60	58	59.
12	58	62	64	63	61	63	61	62	61	60	58	54	49	47	45	44	46	47	49	50	51	51	51	50	55.
13	49	51	52	50	49	49	48	47	46	45	42	41	40	40	40	40	41	42	44	44	45	45	46	47	45.
14	46	48	48	46	48	48	50	49	51	50	47	43	41	39	37	37	38	39	42	44	43	44	44	46	45.
15	49	47	45	50	49	49	51	52	52	50	49	46	44	42	42	42	42	42	43	44	45	46	45	45	47.
16	42	40	39	40	37	41	43	45	41	39	40	39	37	34	32	33	36	37	38	40	40	40	40	41	39.
17	42	43	43	42	42	41	41	41	40	39	38	38	38	37	36	36	36	37	38	38	37	35	34	34	39.
18	34	36	35	35	35	35	35	36	37	37	36	34	34	34	36	37	36	36	38	39	39	39	39	40	37.
19	41	40	40	42	44	44	44	45	45	48	49	50	49	49	47	45	45	47	53	55	58	62	64	67	49.
20	69	70	73	73	73	74	74	74	73	69	65	57	50	45	41	39	40	41	41	43	39	33	32	31	55.
21	32	35	40	41	41	42	42	43	44	42	39	37	37	36	36	36	37	40	42	43	43	44	45	45	40.
22	44	43	43	42	43	44	44	45	43	42	43	39	39	38	38	39	42	43	43	44	46	46	46	44	43.
23	43	42	42	42	43	43	42	42	41	39	39	38	38	39	39	41	42	42	42	42	42	43	43	43	42.
24	43	43	43	44	43	46	51	49	49	49	51	52	53	52	50	49	49	57	68	78	78	76	74	73	55.
25	74	75	76	75	68	62	53	64	60	59	55	51	49	46	45	46	49	51	52	49	50	49	47	49	57.
26	50	50	51	51	51	52	53	53	52	50	48	47	46	46	46	46	47	50	52	53	52	52	52	52	50.
27	52	52	51	51	50	49	49	48	46	45	44	44	41	39	39	44	44	45	48	51	53	53	53	55	48.
28	56	57	58	60	60	60	60	59	54	50	47	43	40	40			44	45	46	46	45	44	43	43	51.
29	45	44	43	43	43	43	44	43	44	43	39	37	36	36	36	36	36	36				36			41.
30																									
31																									
MEAN	56.	55.	56.	56.	56.	57.	58.	58.	57.	56.	54.	52.	50.	48.	47.	47.	47.	48.	52.	53.	54.	54.	54.	54.	

TOTAL NUMBER OF OBSERVATIONS = 8200 MEAN = 53.

I INDICATES CALIBRATION DURING THE HOUR

CORPORATION

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                        DIURNAL VARIATION OF TEMPERATURE AT 8 FEET(DEG F)
                             TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                 HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24 MEAN
DAY

 1       23   22   19   17   15   14    9   10   12   17   21   24   28   30   31   31   30   25   23   22   23   21   22   22     22.
 2       23   22   22   22   23   24   23   23   26   33   40   43   44   45   45   43   40   35   32   31   32   31   30   28     32.
 3       29   29   30   29   30   26   29   30   30   34   37   40   41   43   43   43   38   32   30   29   30   28   29   29     33.
 4       27   25   25   23   25   23   27   26   28   33   37   40   42   41   41   40   38   37   36   35   34   32   32   31     33.
 5       31   29   27   26   25   23   22   23   25   25   26   27   27   27   26   25   23   20   17   14   12   11   13   12     23.
 6       10   12   12   13   14   13   14   14   16   18   19   22   23   24   25   25   23   20   19   19   21   22   21   23     19.
 7       25   23   24   24   24   22   22   20   25   28   32   33   35   36   35   35   33   32   33   32   32   31   32   30     29.
 8       28   27   28   27   25   25   25   25   29   37   40   41   43   44   44   43   40   38   38   36   36   36   36   34     35.
 9       34   33   31   32   33   32   32   31   33   38   41   43   44   45   43   41   38   36   34   30   29   28   28   27     35.
10       26   25   23   22   21   21   19   18   20   21   23   24   26   28   29   28   26   23   17   16   16   16   16   16     22.
11       14   15   13   15   15   14   15   14   17   22   28   29   33   36   38   37   36   30   24   25   25   23   24   22     24.
12       21   19   20   22   19   19   17   20   21   26   30   36   39   41   41   40   38   30   27   28   28   25   25   26     28.
13       28   26   27   28   28   29   29   27   29   37   41   43   44   44   43   43   39   35   31   30   29   30   30   28     34.
14       25   26   28   28   25   27   25   22   24   30   35   39   40   41   42   41   38   33   28   29   25   26   25   22     31.
15       22   22   20   21   21   20   19   19   21   27   30   34   36   38   38   38   35   29   26   24   25   24   23   22     27.
16       22   24   25   23   24   23   19   20   23   33   36   40   44   46   46   43   41   34   32   32   31   29   26   27     31.
17       25   26   26   24   24   24   23   24   25   30   35   39   41   44   46   46   41   37   35   31   30   30   29   27     32.
18       29   29   28   29   26   26   27   28   28   32   38   42   43   44   43   40   37   35   31   30   29   29   26   26     33.
19       25   22   21   15   15   19   19   18   19   20   25   27   30   32   33   32   28   25   23   21   17   15   15   17     23.
20       15   14   13   13   12   10   12   12   13   18   25   27   29   32   33   33   32   26   22   23   24   22   23   23     22.
21       24   23   23   22   22   20   23   20   22   29   34   35   37   38   37   37   32   28   26   24   20   17   17   19     27.
22       19   17   14   15   15   15   15   14   18   22   30   33   34   34   35   33   31   28   25   24   21   21   22   20     24.
23       23   24   21   20   20   20   20   22   22   27   31   34   35   35   36   34   33   31   31   31   30   30   29   29     28.
24       29   29   29   29   28   29   26   22   23   25   25   26   26   27   27   27   25   23   21   19   18   16   14   11     24.
25        9   10   10    9    8    9    9   12   15   18   24   27   28   30   31   31   28   24   23   23   23   24   24   21     20.
26       22   22   22   20   21   21   21   22   24   31   37   39   40   42   41   40   37   33   31   31   29   29   32   31     30.
27       32   31   31   31   31   31   30   29   31   34   38   39   40   38   38   36   33   29   27   26   24   23   20   18     31.
28       17   15   15   17   17   16   16   14   18   24   30   32   34   36             33   26   24   23   22   22   22   23     23.
29       22   22   22   24   20   19   21   18   22   29   35   37   39   40   40   38   33   30   27   27   26   25   24   25     28.
30       26   25   24   24   26   25   25   25   24   29   31   30   27   29   28   27   24   21   20   19   14   14   15   13     24.
31       15   11   13   15   18   21   21   23   23   26   27   28   30   31   31   30   28   27   26   25   24   24   24   24     24.
 MEAN   24.  23.  23.  22.  22.  22.  22.  21.  23.  28.  32.  35.  36.  37.  37.  36.  34.  30.  28.  27.  26.  25.  25.  24.

                           TOTAL NUMBER OF OBSERVATIONS =  8842    MEAN  =      27.

                 : INDICATES CALIBRATION DURING THE HOUR
```

```
                         DIURNAL VARIATION OF TEMPERATURE AT 30 FEET(DEG F)
                               TRAILER NO, = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                   HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

  1      20  19  18  15  13  13  10  10  11  15  19  24  26  28  29  30  29  27  24  23  24  22  22  23   21,
  2      23  21  22  21  21  22  22  22  24  30  37  41  42  42  43  42  38  34  32  30  32  29  28  27   31,
  3      28  29  29  28  29  27  27  28  28  31  34  37  39  41  41  41  39  33  29  30  30  29  28  28   32,
  4      28  26  25  23  24  22  25  24  26  30  34  38  39  38  38  37  36  35  34  33  33  31  30  30   31,
  5      30  27  25  24  23  20  20  20  22  22  22  23  23  23  22  22  20  18  16  15  13  12  12  11   21,
  6       8  10  10  11  12  11  11  11  13  14  16  19  20  21  23  23  22  19  18  18  19  19  19  20   17,
  7      21  21  21  21  21  21  20  18  22  25  29  31  33  33  34  33  31  30  31  31  30  30  30  29   27,
  8      27  26  27  26  25  25  26  26  28  35  37  39  41  42  42  42  39  38  38  36  35  35  34  34   34,
  9      33  33  31  31  32  32  31  30  32  36  39  40  41  43  41  39  37  35  33  29  28  27  26  24   34,
 10      23  21  20  19  18  18  17  16  16  18  19  21  22  24  25  26  25  23  22  19  17  15  14  16   20,
 11      15  14  11  14  13  12  13  15  15  20  25  26  30  34  36  37  36  32  26  25  25  23  23  23   23,
 12      21  18  20  21  19  17  18  19  20  24  29  33  36  38  40  40  37  34  32  29  30  26  25  27   28,
 13      29  27  27  28  27  28  28  29  29  35  39                                                       30,
 14
 15
 16                                                  42  44  46  42  40  36  34  32  32  30  28  26   36,
 17      25  25  25  24  24  24  22  23  24  28  33  36  39  42  44  44  42  38  36  34  31  30  30  29   32,
 18      28  29  29  28  26  26  27  28  26  30  38  40  41  41  41  38  35  34  33  31  29  29  26  24   32,
 19      24  23  21  16  15  19  19  17  17  15  21  22  26  28  29  29  27  24  22  21  18  16  15  14   21,
 20      13  13  11  11  11  10   9  10   9  14  21  24  26  29  31  32  31  27  24  23  22  21  22  21   20,
 21      22  22  22  21  21  20  21  19  19  26  30  33  34  35  35  35  32  27  25  24  23  21  17  17   25,
 22      19  18  14  15  14  14  14  13  16  20  27  31  33  32  33  32  30  28  25  25  22  22  21  21   23,
 23      23  23  21  20  19  19  19  21  21  26  30  32  32  33  34  32  31  29  30  29  28  28  27  28   27,
 24      28  27  27  27  26  27  24  20  21  21  22  23  23  24  25  24  22  20  18  17  17  16  15  14   22,
 25       8   9   9   9   9   8   8  10  13  16  21  24  26  28  29  29  26  23  22  22  21  22  22  20   19,
 26      20  21  21  20  20  20  20  21  22  29  35  37  38  40  39  39  36  33  31  31  29  29  31  31   29,
 27      31  30  29  29  30  29  28  28  28  31  35  37  37  36  35  34  32  30  27  26  24  23  20  19   30,
 28      18  18  17  17  17  18  16  17  18  23  28  31  33  34          32  27  24  24  22  23  22  22   23,
 29      22  22  22  23  22  21  22  19  21  26  33  36  37  37  39  37  33  29  27  27  26  25  25  25   28,
 30      26  25  25  24  25  24  24  24  24  27  29  27  24  26  25  24  22  19  18  18  16  15  14  13   23,
 31      15  12  12  16  19  22  22  22  22  24  25  26  27  28  28  27  26  25  24  24  23  23  23  22   23,
 MEAN    23. 22. 22. 21. 21. 21. 21. 20. 21. 25. 29. 31. 33. 34. 35. 34. 32. 29. 27. 26. 25. 24. 24. 23.

                         TOTAL NUMBER OF OBSERVATIONS =  7982    MEAN  =      26,

                : INDICATES CALIBRATION DURING THE HOUR
```

DIURNAL VARIATION OF TEMPERATURE AT 100 FEET(DEG F)
TRAILER NO. = 23   PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	20	19	18	15	14	14	13	13	13	14	18	22	25	26	28	29	28	27	26	25	26	24	24	25	22.
2	26	23	25	25	24	25	26	26	26	30	37	40	41	42	42	41	38	35	33	33	33	32	32	30	32.
3	31	31	32	31	30	30	28	29	30	32	34	37	39	40	41	41	39	36	33	33	32	32	30	30	34.
4	30	29	28	26	27	26	27	27	28	30	34	37	38	38	38	37	36	35	34	34	33	32	31	31	32.
5	31	28	26	24	23	21	20	21	22	22	23	23	22	23	22	22	21	19	18	17	16	14	16	14	22.
6	11	12	12	13	14	14	13	13	14	15	16	19	20	21	22	23	23	21	21	20	20	20	20	21	18.
7	22	21	22	22	22	22	21	20	23	26	29	30	32	33	33	33	31	31	31	31	30	31	31	29	28.
8	28	28	28	27	27	27	28	28	30	35	37	39	40	41	42	41	40	38	38	36	36	36	35	34	35.
9	35	33	32	31	33	32	32	30	32	36	38	39	41	42	40	39	37	36	33	30	28	27	26	25	34.
10	23	22	21	19	19	19	18	17	17	18	20	21	23	24	25	26	26	25	23	22	20	18	16	18	21.
11	17	18	14	16	17	15	16	18	17	20	25	26	30	33	35	36	36	33	28	26	26	26	25	26	25.
12	25	22	21	23	22	20	21	21	23	24	29	33	36	37	39	39	37	35	34	32	32	29	28	30	29.
13	32	29	30	31	30	30	29	32	31	35	39	40	40	41	42	41	39	36	33	33	32	32	31	31	34.
14	30	30	30	29	29	29	27	27	25	28	33	36	38	39	40	40	38	36	33	32	31	28	28	25	32.
15	24	27	27	23	25	23	22	21	22	25	27	30	33	35	36	36	35	33	32	31	28	25	27	26	29.
16	27	29	28	28	25	25	25	25	28	32	35	38	41	44	45	42	40	37	35	33	33	31	30	28	33.
17	27	27	28	27	27	27	25	26	27	28	33	36	38	41	43	44	42	39	37	36	34	33	33	31	33.
18	31	31	32	31	31	29	30	30	29	30	35	39	40	41	40	38	36	35	34	32	31	31	29	25	33.
19	25	25	24	19	19	21	21	20	20	17	21	22	25	28	28	29	27	25	23	22	20	18	18	16	23.
20	15	15	14	14	13	13	13	13	14	16	21	24	26	28	30	32	31	28	26	25	25	24	24	25	22.
21	24	23	23	23	22	22	22	21	21	25	29	31	32	33	34	33	31	27	25	24	24	22	19	19	26.
22	21	20	17	18	15	16	16	15	18	20	26	29	31	31	31	31	29	28	25	25	24	22	23	23	24.
23	23	23	22	21	21	21	21	22	23	26	29	30	31	31	32	31	30	29	29	29	28	27	26	27	27.
24	27	27	26	26	26	27	24	20	20	20	21	22	22	22	24	23	21	20	18	17	17	16	15	15	22.
25	11	11	10	11	12	10	10	12	14	16	20	23	24	27	28	27	25	22	22	23	22	22	21	21	19.
26	20	21	21	21	21	21	22	23	24	29	33	35	36	38	38	37	35	33	31	32	30	30	31	31	29.
27	30	29	28	28	29	29	28	27	28	30	33	35	35	34	34	33	31	30	27	26	24	23	21	20	29.
28	20	20	18	18	17	18	18	18	20	23	26	29	31	33			31	27	25	24	24	25	24	23	24.
29	24	24	25	25	23	23	24	21	22	25	32	34	35	37	38	36	33	30	28	28	27	27	27	27	29.
30	27	26	25	25	25	24	24	24	24	26	28	26	23	24	24	22	21	19	18	18	16	15	14	14	23.
31	16	16	15	20	21	22	21	21	22	23	24	25	25	26	26	26	25	24	24	23	22	22	22	22	23.
MEAN	25.	24.	24.	23.	23.	23.	23.	22.	23.	26.	29.	31.	33.	34.	34.	34.	32.	31.	29.	28.	27.	26.	26.	25.	

TOTAL NUMBER OF OBSERVATIONS = 8845   MEAN = 27.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF TEMPERATURE AT 200 FEET(DEG F)
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	17	16	15	13	12	12	11	10	11	11	15	19	22	23	25	26	25	25	24	23	25	23	24	24	19.
2	25	23	24	23	23	25	25	25	25	29	35	38	39	39	40	39	37	34	32	31	31	31	30	29	31.
3	30	30	30	29	29	28	28	28	28	30	32	34	36	38	39	36	37	34	31	31	30	30	29	28	32.
4	28	28	27	26	26	26	26	26	27	28	31	34	35	35	35	35	34	33	31	31	31	30	29	28	31.
5	29	27	24	22	21	18	17	19	19	19	20	20	19	20	19	19	18	16	15	14	13	12	13	12	19.
6	9	10	10	11	11	11	10	11	11	11	13	15	16	18	19	20	20	20	20	19	18	17	18	18	15.
7	19	19	19	19	19	19	18	18	20	23	26	28	30	30	31	30	29	28	29	28	28	28	28	27	25.
8	25	25	26	25	25	25	26	26	28	32	34	36	38	39	40	39	38	36	36	34	34	34	33	33	33.
9	32	31	30	30	31	30	30	28	30	34	37	38	39	41	39	37	35	33	31	28	26	25	23	22	32.
10	21	19	18	16	16	16	15	14	14	15	17	18	19	21	22	23	23	22	21	20	19	17	16	17	19.
11	16	16	13	14	16	15	14	16	15	18	22	23	27	31	33	34	33	32	25	24	24	25	24	25	23.
12	25	21	20	21	21	20	21	20	21	23	26	30	33	35	37	37	35	34	32	30	31	29	29	29	28.
13	30	28	28	29	29	30	29	30	29	33	36	37	38	39	39	39	36	34	32	31	31	30	30	29	33.
14	29	28	29	28	28	27	26	27	25	26	31	34	35	37	37	37	36	34	31	30	30	27	27	25	31.
15	23	25	27	22	24	23	20	20	20	23	25	28	30	32	33	34	33	32	30	29	28	26	26	26	27.
16	27	28	28	27	25	26	25	24	28	31	33	36	39	41	43	41	39	35	33	32	31	31	29	28	32.
17	28	26	26	26	25	27	26	26	28	29	31	33	36	39	41	42	40	37	35	34	33	32	33	32	32.
18	31	31	32	30	29	29	29	28	28	29	33	37	38	38	38	36	34	33	32	30	29	29	27	24	32.
19	24	26	25	20	18	19	20	19	18	16	18	19	22	25	26	26	25	23	20	20	18	16	16	14	21.
20	13	13	12	13	12	12	12	12	13	15	17	20	23	26	28	29	28	27	24	22	23	23	23	23	20.
21	23	23	23	22	22	22	21	21	21	24	28	29	30	32	33	32	29	28	24	23	23	21	19	19	25.
22	20	20	18	19	17	17	16	15	18	20	24	27	29	29	29	29	28	26	24	23	23	22	23	23	23.
23	22	22	21	20	21	20	20	22	22	24	27	29	29	30	31	30	28	27	27	27	26	25	25	25	25.
24	26	25	25	25	25	25	23	20	19	18	18	20	20	21	22	21	20	18	16	15	15	14	13	13	20.
25	11	10	9	10	11	10	10	11	12	14	18	21	22	25	26	25	23	21	20	23	21	21	20	20	18.
26	19	20	20	20	20	21	21	22	23	27	32	34	35	37	36	35	33	32	30	30	30	30	29	29	28.
27	28	28	27	27	28	27	26	26	27	29	32	34	35	34	33	31	30	28	26	24	23	22	20	19	28.
28	19	19	18	17	17	17	17	18	19	22	25	28	29	31			29	27	25	24	24	24	23	22	23.
29	23	22	23	23	22	22	22	21	21	24	30	33	34	34	35	34	30	28	26	26	26	26	25	24	27.
30	24	24	24	23	24	23	23	23	23	24	26	24	21	22	22	21	19	17	16	16	15	13	13	12	21.
31	16	17	18	19	20	20	19	19	20	21	22	23	24	25	25	25	23	22	22	21	21	20	21	21	21.
MEAN	23.	23.	23.	22.	22.	22.	21.	21.	22.	24.	27.	29.	30.	32.	32.	32.	30.	29.	27.	26.	26.	25.	24.	24.	

TOTAL NUMBER OF OBSERVATIONS = 8844 MEAN = 26.

: INDICATES CALIBRATION DURING THE HOUR

```
                    HOURLY TOTAL SOLAR RADIATION(LANGLEY)
                      TRAILER NO. - 23   PERIOD(12/ 1/76 TO 12/31/76)

                                            HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  TOTAL
 DAY

  1       0   0   0   0   0   0   0   3  20  33  42  28  39  35  26  13   3   0   0   0   0   0   0   0   242
  2       0   0   0   0   0   0   0   1  12  24  32  39  36  35  25  12   2   0   0   0   0   0   0   0   218
  3       0   0   0   0   0   0   0   1   5   7  10  19  34  34  24  12   1   0   0   0   0   0   0   0   147
  4       0   0   0   0   0   0   0   1  10  21  31  25  22  15  11   3   0   0   0   0   0   0   0   0   139
  5       0   0   0   0   0   0   0   1   4   5   5  12  14  14  10   7   1   0   0   0   0   0   0   0    73
  6       0   0   0   0   0   0   0   0   3   7  12  17  14  12  10   6   1   0   0   0   0   0   0   0    82
  7       0   0   0   0   0   0   0   1   6  13  18  23  33  28  21   8   1   0   0   0   0   0   0   0   152
  8       0   0   0   0   0   0   0   1  12  24  34  38  38  33  25  12   2   0   0   0   0   0   0   0   219
  9       0   0   0   0   0   0   0   1  10  20  37  50  35  37  23   7   1   0   0   0   0   0   0   0   221
 10       0   0   0   0   0   0   0   1   4  10  15  26  26  29  22  13   2   0   0   0   0   0   0   0   148
 11       0   0   0   0   0   0   0   2  13  25  35  37  38  33  24  12   2   0   0   0   0   0   0   0   221
 12       0   0   0   0   0   0   0   1  11  23  33  38  38  34  25  12   2   0   0   0   0   0   0   0   217
 13       0   0   0   0   0   0   0   1  11  23  33  38  38  34  23  14   2   0   0   0   0   0   0   0   217
 14       0   0   0   0   0   0   0   0   9  21  31  37  38  31  25  13   1   0   0   0   0   0   0   0   206
 15       0   0   0   0   0   0   0   0   9  14  32  38  38  34  25  14   2   0   0   0   0   0   0   0   206
 16       0   0   0   0   0   0   0   0   9  23  25  37  39  32  17   5   2   0   0   0   0   0   0   0   189
 17       0   0   0   0   0   0   0   1   9  21  32  38  38  34  26  14   2   0   0   0   0   0   0   0   215
 18       0   0   0   0   0   0   0   1  10  20  30  38  35  34  16   9   2   0   0   0   0   0   0   0   195
 19       0   0   0   0   0   0   0   0   9  21  32  38  38  34  25  14   2   0   0   0   0   0   0   0   213
 20       0   0   0   0   0   0   0   1  17  31  37  39  38  34  25  14   2   0   0   0   0   0   0   0   238
 21       0   0   0   0   0   0   0   0   9  22  32  38  38  34  26  14   2   0   0   0   0   0   0   0   215
 22       0   0   0   0   0   0   0   1   9  16  32  38  37  24  20   6   3   0   0   0   0   0   0   0   186
 23       0   0   0   0   0   0   0   0   4  10  20  22  21  27  28   8   1   0   0   0   0   0   0   0   141
 24       0   0   0   0   0   0   0   0   3   9  15  20  16  21  18  12   2   0   0   0   0   0   0   0   116
 25       0   0   0   0   0   0   0   1  13  18  34  37  37  33  25  13   2   0   0   0   0   0   0   0   213
 26       0   0   0   0   0   0   0   0   8  20  30  36  37  33  26  14   3   0   0   0   0   0   0   0   207
 27       0   0   0   0   0   0   0   0   8  20  23  37  38  35  26  14   2   0   0   0   0   0   0   0   203
 28       0   0   0   0   0   0   0   0   9  17  31  37  38  30   3   1   3   0   0   0   0   0   0   0   169
 29       0   0   0   0   0   0   0   0   8  21  32  38  38  28  21  13   2   0   0   0   0   0   0   0   201
 30       0   0   0   0   0   0   0   0   2  15  14  25  28  31  22  10   3   0   0   0   0   0   0   0   150
 31       0   0   0   0   0   0   0   0   2   7  11  15  25  35  18  10   3   0   0   0   0   0   0   0   126

TOTAL/10  0   0   0   0   0   0   0   2  27  56  83 100 102  94  66  33   6   0   0   0   0   0   0   0

                  TOTAL NUMBER OF OBSERVATIONS =  8647     TOTAL  =   5685.

          : INDICATES CALIBRATION DURING THE HOUR
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                          TEMPERATURE CHANGE FROM 30' TO 100' (DEG F*10)
                            TRAILER NO. = 23  PERIOD(12/ 1/76 TO 12/31/76)

                                                    HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

 1       -2   0   0   1   2   5  22  25  13 - 6                                                          6
 2
 3
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27                                                       - 9 - 4   0   3   5   0   6   4   9  12         3
28       16  27  19  12   7  13  24  20  21 - 3 - 5 - 7 - 6 - 9         - 2   9  10  11  30  26  22  19        12
29       21  23  23  14  16  20  13  24  13 - 2 - 8 - 8 -10 - 8 - 7 - 6 - 2   1   7   9  10  17  13   8         7
30        7   7   9   8   2   3   2   1   3 - 3 - 5 - 7 - 7 - 8 - 8 - 5 - 3   0   1   0   3   1   3   9         0
31       17  36  30  44  17   7   0   0   0 - 3 - 5 - 5 - 7 - 9 - 7 - 5 - 3 - 1   0   0 - 1   0   0   0         4
MEAN      12  18  16  16   9  10  13  15  10  -3  -7  -8  -9 -10  -9  -6  -3   2   5   4  10  10  10  10

                     TOTAL NUMBER OF OBSERVATIONS =  1352    MEAN  =       6.

         : INDICATES CALIBRATION DURING THE HOUR
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RADIAN CORPORATION

TEMPERATURE CHANGE FROM 30' TO 200' (DEG F*10)
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1											-25	-26	-25	-26	-25	-23	-20	-4	10	11	18	21	28	15	-5
2	14	25	15	20	22	24	20	30	16	-10	-22	-25	-27	-26	-25	-22	-13	-1	2	10	4	17	19	22	4
3	22	12	10	12	1	8	14	1	2	-3	-13	-22	-24	-25	-23	-20	-11	12	20	16	6	7	8	2	0
4	5	24	25	30	19	44	8	19	8	-16	-22	-24	-24	-22	-22	-19	-16	-15	-16	-12	-10	-9	-10	-6	-3
5	-3	1	-7	-11	-13	-18	-12	-9	-19	-21	-23	-24	-25	-25	-24	-23	-15	-7	-7	-4	0	5	3	17	-12
6	15	9	5	1	-6	6	-1	0	-10	-22	-23	-20	-26	-25	-20	-24	-16	9	17	15	-1	-11	-5	-13	-7
7	-16	-13	-8	-14	-13	-10	-9	1	-8	-17	-23	-23	-25	-24	-25	-21	-15	-14	-16	-17	-16	-12	-12	-9	-16
8	-5	-2	-3	-2	5	5	1	7	1	-23	-25	-24	-24	-24	-22	-22	-15	-13	-12	-8	-9	-8	-3	-7	-11
9	-5	-11	-2	-7	-11	-10	-8	-11	-13	-19	-16	-23	-19	-13	-14	-17	-14	-15	-15	-11	-9	-8	-17	-18	-14
10	-19	-17	-18	-20	-10	-14	-12	-12	-17	-22	-23	-23	-24	-25	-24	-23	-17	-6	0	4	14	25	13	18	-12
11	17	22	20	9	27	16	15	11	4	-15	-21	-21	-24	-24	-24	-23	-16	-3	-3	-2	-3	20	17	26	1
12	33	25	3	6	23	26	33	15	6	-1	-18	-25	-25	-24	-23	-21	-14	1	2	13	11	36	34	19	5
13	10	14	12	9	21	24	18	10	5	-13	-24	-24	-25	-23	-24	-23	-16	-8	7	13	11	2	1	14	-1
14	18	4	14	17	10	5	0	29	17	-6	-21	-24	-20	-24	-24	-21	-17	-4	-1	0	20	12	10	23	1
15	5	20	43	12	14	19	13	9	1	-12	-15	-20	-27	-20	-25	-23	-17	-1	-5	9	26	24	29	32	3
16	40	23	27	20	30	36	39	13	27	6	-12	-14	-21	-24	-22	-7	-9	0	-2	-5	-3	10	13	12	8
17	4	8	4	19	17	28	36	26	32	13	-9	-20	-23	-23	-22	-19	-8	-3	-4	0	23	24	28	30	6
18	23	20	31	22	32	30	25	10	20	-4	-19	-26	-20	-26	-23	-18	-8	-7	0	-2	2	1	13	7	3
19	0	31	39	41	31	4	9	24	17	11	-24	-20	-27	-27	-26	-23	-15	-9	-10	0	3	1	9	-1	1
20	2	3	14	16	20	22	26	23	36	12	-24	-24	-26	-25	-23	-22	-17	0	8	1	12	23	14	23	4
21	15	11	7	9	9	16	4	16	23	-14	-25	-27	-26	-25	-24	-23	-15	0	-5	-4	2	11	24	15	-1
22	8	21	43	36	37	31	25	21	16	8	-20	-26	-27	-25	-24	-19	-15	-7	-3	-4	12	5	22	27	5
23	-1	-4	4	7	20	15	15	11	18	-5	-24	-22	-23	-24	-24	-21	-17	-15	-16	-16	-13	-15	-13	-15	-8
24	-15	-12	-12	-12	-8	-11	-6	2	-14	-20	-24	-24	-25	-26	-25	-24	-20	-18	-18	-12	-10	-10	-8	-4	-16
25	35	16	13	7	31	22	28	5	0	-7	-26	-26	-25	-25	-26	-25	-19	-10	-4	11	-2	-9	-8	9	-2
26	4	0	-2	5	1	10	13	8	9	-19	-24	-27	-26	-27	-26	-22	-16	-6	-5	-2	11	6	-8	-5	-7
27	-14	-13	-14	-13	-12	-14	-14	-11	-10	-18	-25	-23	-9	-6	-16	-23	-14	-8	-7	-12	-3	-5	1	3	-13
28	6	15	13	3	1	9	13	14	16	-7	-23	-26	-25	-27			-19	4	5	6	23	15	11	8	1
29	18	14	12	3	11	11	2	24	3	-18	-27	-27	-27	-25	-26	-24	-18	-10	-2	0	0	4	3	-2	-5
30	-5	-4	0	-1	-7	-6	-9	-9	-8	-21	-25	-25	-27	-26	-29	-25	-22	-19	-14	-16	-11	-12	-9	3	-15
31	15	45	53	33	5	-6	-16	-16	-17	-23	-25	-25	-24	-24	-18	-21	-21	-24	-17	-18	-19	-18	-14	-11	-9
MEAN	7	9	12	9	11	10	9	9	5	-11	-23	-26	-26	-25	-25	-23	-17	-8	-5	-2	2	5	6	7	

TOTAL NUMBER OF OBSERVATIONS = 6700   MEAN = -4.

: INDICATES CALIBRATION DURING THE HOUR

[illegible] CORPORATION

DIURNAL VARIATION OF BAROMETRIC PRESSURE
TRAILER NO. - 23 PERIOD(12/ 1/75 TO 12/31/75)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	793	794	795	796	796	797	797	797	798	799	800	799	799	799	799	799	799	799	799	800	800	800	800	800	798
2	800	799	799	799	799	799	799	799	799	796	795	797	796	796	795	795	795	794	794	794	794	794	795	794	797
3	795	794	794	793	793	793	793	793	793	793	793	792	791	791	790	790	790	790	790	790	790	790	790	790	792
4	791	790	787	789	789	789	789	785	785	784	787	787	786	785	784	784	784	784	784	783	783	783	783	783	786
5	783	785	785	785	785	784	784	785	785	786	785	786	785	785	786	787	787	788	786	788	788	789	789	789	786
6	789	789	789	787	789	789	790	790	790	791	792	792	792	791	791	792	791	791	791	791	791	790	791	791	791
7	791	791	791	791	791	791	791	791	791	792	792	792	792	791	791	791	791	791	791	791	791	791	792	792	791
8	791	791	792	792	791	791	791	791	792	792	792	791	791	786	785	786	787	787	787	786	786	785	785	785	789
9	785	785	784	784	783	783	783	784	784	784	783	783	783	783	782	782	783	784	784	785	786	786	787	788	784
10	793	791	791	791	791	791	791	792	793	793	793	794	793	793	793	793	794	794	794	794	794	794	795	795	793
11	795	795	795	795	795	795	795	795	795	795	796	794	794	793	793	793	793	793	793	793	793	793	794	794	794
12	794	794	794	791	794	795	795	795	796	795	796	796	795	795	795	795	795	795	795	795	795	795	795	795	795
13	795	795	795	795	796	796	796	796	795	795	794	794	793	792	792	792	792	792	792	792	792	792	792	792	794
14	792	792	792	792	792	792	792	793	793	793	793	793	792	792	792	792	792	792	792	792	792	792	792	793	792
15	793	793	793	793	793	794	794	794	795	795	795	796	796	795	795	795	795	796	796	796	796	796	796	797	795
16	795	796	796	796	797	797	797	797	797	797	796	796	795	794	795	795	794	793	793	793	793	793	794	793	795
17	793	793	792	792	791	791	791	791	791	791	791	790	789	788	788	786	784	786	788	788	788	788	788	788	790
18	785	788	788	786	786	788	788	789	790	789	789	789	788	788	788	788	788	789	789	789	789	789	789	790	789
19	794	791	791	791	791	791	791	792	792	793	794	794	793	793	793	793	793	794	794	794	795	795	795	795	793
20	795	795	796	797	797	797	797	797	797	797	797	796	795	794	794	794	794	794	794	794	793	793	793	793	795
21	793	793	793	793	792	792	792	791	791	791	790	789	787	785	788	788	788	788	788	788	789	789	789	789	790
22	789	789	789	789	789	789	789	790	790	790	791	790	790	790	790	790	790	791	791	791	791	791	791	791	790
23	791	791	791	791	790	790	790	790	790	790	789	788	787	787	786	786	785	785	785	785	785	785	785	784	788
24	784	784	783	784	783	782	782	783	783	784	784	783	783	782	782	783	783	784	785	786	787	787	787	788	784
25	789	788	789	790	790	790	791	792	792	793	794	794	793	793	793	793	793	794	795	795	795	795	796	797	793
26	797	797	797	797	797	797	797	797	797	796	795	795	794	793	792	792	792	792	792	791	791	790	789	789	794
27	785	788	788	787	786	786	786	785	786	786	787	786	785	785	786	786	786	787	787	788	788	789	790	790	787
28	791	790	791	791	791	792	792	792	792	793	793	792	791	791			791	791	791	791	791	791	791	790	792
29	791	789	789	788	786	786	786	787	787	787	786	785	784	783	783	782	782	782	782	781	781	781	781	780	785
30	781	780	781	779	779	779	779	779	780	781	780	781	780	780	780	779	780	780	781	781	781	781	781	780	780
31	780	780	781	780	781	780	781	781	781	781	781	780	779	779	779	779	780	780	780	780	781	781	781	781	780
MEAN	791	791	791	791	791	791	791	791	791	791	791	791	790	791	790	790	790	790	790	790	790	790	790	790	

TOTAL NUMBER OF OBSERVATIONS = [illegible] MEAN = 790.

* INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 30 FEET
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	15	5	5	8	8	4	6	3	2	0	2	2	3	3	3	3	2	5	3	3	8	3	4	1	5.
2	3	5	3	3	3	2	4	1	3	4	2	7	8	9	12	11	11	9	5	4	4	5	4	4	6.
3	5	5	5	5	3	4	4	4	2	2	1	3	3	1	4	4	4	7	4	3	2	3	2	0	4.
4	0	1	1	4	2	2	3	4	4	3	3	5	10	8	7	7	5	8	12	8	4	3	3	4	5.
5	2	2	5	4	2	1	1	1	1	2	5	9	9	12	10	8	7	2	1	1	4	4	2	1	5.
6	1	2	0	0	1	0	0	0	0	0	0	3	4	4	2	1	5	8	7	2	4	9	4	11	3.
7	13	13	9	5	2	2	2	4	4	3	0	0	6	10	12	11	12	10	10	4	4	3	10	8	7.
8	4	4	6	3	3	3	1	3	2	9	14	14	14	14	14	12	8	3	4	3	11	24	25	8	9.
9	10	5	13	9	19	14	8	3	6	13	20	15	14	16	16	14	13	6	5	7	4	4	7	10	11.
10	12	10	7	7	6	5	4	3	3	4	5	4	3	5	6	9	4	1	1	3	2	2	3	2	5.
11	3	2	3	2	2	3	2	0	1	0	2	6	4	3	2	0	1	1	7	4	2	4	3	2	3.
12	3	4	1	0	1	0	5	0	1	0	1	4	5	4	3	5	5	4	4	0	0	3	3	2	3.
13	3	1	1	4	6	4	4	4	4	6	11	14	13	13	11	8	5	6	6	4	4	2	3	5	6.
14	3	2	4	2	1	1	1	4	1	1	1	2	4	3	5	5	4	2	5	1	3	0	0	3	3.
15	3	2	2	4	3	2	3	2	0	0	4	7	9	8	6	4	6	4	3	2	0	0	1	4	4.
16	4	1	2	2	1	1	4	1	3	1	3	4	5	4	4	5	1	6	3	1	0	1	3	1	3.
17	1	0	0	1	0	0	1	0	0	0	1	3	3	3	3	3	3	2	1	2	2	1	1	3	2.
18	0	1	2	4	3	2	6	5	4	1	2	8	7	7	9	6	2	2	5	3	3	2	2	0	4.
19	0	0	3	6	3	0	0	0	1	4	6	7	8	10	10	11	11	5	4	2	2	4	5	0	5.
20	0	0	1	1	1	4	0	0	0	3	2	4	4	2	3	3	3	5	6	1	4	1	3	5	3.
21	4	5	4	4	6	4	3	6	4	4	7	8	7	5	4	4			0	0	2	0	0	0	4.
22	0	0	1	0	0	0	0	0	0	0	0	3	7	8	6	5	3	3	3	1	2	2	1	2	2.
23	2	1	5	3	4	4	4	4	4	4	8	13	13	6	11	7	4	4	13	14	16	14	13	15	8.
24	14	10	10	5	2	2	4	4	6	5	8	5	9	7	7	10	12	9	5	4	1	0	1	3	6.
25	3	0	3	3	3	2	1	2	3	2	2	2	4	2	5	9	10	8	4	4	5	6	6	7	4.
26	4	6	4	4	5	5	5	4	4	3	5	11	8	8	11	13	13	12	5	3	5	5	3	5	7.
27	5	8	10	6	6	12	8	12	13	13	10	12	24	22	15	13	9	5	3	4	4	5	4	3	10.
28	5	6	4	2	1	2	1	2	2	0	2	2	3	5			8	6	2	1	4	4	4	5	4.
29	5	4	4	7	3	1	2	3	4	4	5	4	5	6	9	12	12	14	4	4	4	4	5	4	6.
30	3	4	5	5	11	4	6	5	2	7	9	9	8	9	10	6	6	5	2	0	2	2	0	0	6.
31	3	3	1	1	0	4	5	7	2	7	8	12	15	16	16	10	14	10	10	5	7	8	5	10	8.
MEAN	5.	4.	4.	4.	4.	4.	4.	3.	3.	4.	5.	7.	8.	8.	8.	8.	7.	6.	5.	4.	4.	5.	5.	5.	

TOTAL NUMBER OF OBSERVATIONS = 8620 MEAN = 5.

! INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 100 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	17	5	6	9	10	6	4	5	2	0	2	2	4	4	4	4	2	5	3	5	9	2	5	1	5.
2	1	5	3	2	3	3	1	0	3	5	2	7	10	11	13	13	14	12	6	5	3	4	3	4	6.
3	4	5	4	5	5	3	6	5	2	3	2	4	3	1	5	4	5	11	3	2	2	1	2	1	4.
4	0	0	1	2	0	1	5	5	5	4	4	5	12	8	8	9	6	9	14	10	5	4	5	5	6.
5	2	4	6	5	2	2	2	2	3	4	7	10	11	13	11	10	8	4	2	0	2	3	1	1	5.
6	2	2	0	1	1	0	1	0	0	0	0	4	5	4	2	1	6	10	10	6	8	11	5	13	4.
7	15	14	11	6	2	3	4	3	5	3	5	4	7	10	13	12	13	13	12	5	5	5	13	11	9.
8	6	6	10	5	2	2	2	4	2	9	14	14	14	14	14	11	10	4	5	5	15	29	30	10	10.
9	13	7	17	12	24	18	12	3	7	14	21	15	14	16	17	14	14	8	6	8	5	5	9	12	13.
10	14	12	8	8	7	6	6	5	3	5	6	4	4	6	7	10	5	3	0	2	1	3	4	2	6.
11	2	2	4	1	1	4	2	0	1	1	2	6	5	4	2	1	2	2	7	4	1	5	5	1	3.
12	1	5	1	0	1	0	3	0	0	0	1	4	6	5	4	5	6	4	4	1	0	2	1	1	3.
13	4	0	0	4	7	5	5	3	6	7	13	15	14	14	13	9	6	7	7	5	5	1	2	6	7.
14	5	1	4	5	3	1	1	2	2	2	1	3	4	3	5	5	4	2	4	1	2	0	0	3	3.
15	3	3	4	4	1	1	3	1	0	0	4	8	10	9	7	5	7	4	0	1	1	3	2	2	4.
16	2	2	3	2	3	1	3	1	3	6	3	3	5	4	4	5	1	6	4	0	0	1	1	2	3.
17	1	0	0	0	0	1	2	0	0	0	1	4	4	4	3	3	4	1	0	0	1	1	3	1	2.
18	0	4	4	6	2	3	6	6	5	2	3	10	8	8	10	7	3	1	6	2	2	1	1	1	5.
19	0	0	1	6	4	2	0	0	2	4	6	8	9	11	11	13	12	7	4	3	3	3	4	0	5.
20	0	0	0	0	0	1	0	0	1	4	3	4	4	3	4	3	4	4	6	0	3	2	3	4	3.
21	5	5	4	4	6	3	3	7	5	4	8	9	8	5	5	7	8	9	2	1	0	1	2	1	5.
22	3	1	0	2	2	1	0	1	1	4	5	4	7	9	6	5	5	4	3	1	0	0	0	2	3.
23	3	2	5	1	4	3	5	5	4	5	8	13	13	6	13	9	5	6	16	18	21	17	15	17	9.
24	17	13	14	9	4	5	7	6	8	5	8	5	10	9	7	11	14	10	7	5	2	2	1	2	8.
25	2	1	1	1	3	1	2	2	4	1	3	3	4	2	6	10	12	11	6	8	7	8	8	9	5.
26	6	10	6	4	6	6	5	4	3	5	6	12	8	9	12	16	15	14	6	5	7	6	4	7	8.
27	5	10	13	9	9	14	10	13	14	14	10	12	24	22	16	14	10	8	3	7	7	7	5	3	11.
28	6	8	7	4	1	2	0	0	4	1	2	3	4	6			10	10	4	3	3	3	3	5	4.
29	5	6	9	11	7	2	4	3	4	5	5	4	6	8	10	13	15	18	5	4	5	4	4	4	7.
30	4	7	7	5	14	7	9	8	2	9	10	9	9	11	11	8	8	6	3	0	1	0	0	0	7.
31	4	0	1	0	0	5	7	9	4	7	10	13	16	19	18	18	16	11	13	7	9	11	8	13	10.
MEAN	5.	5.	5.	5.	5.	4.	4.	4.	4.	5.	6.	8.	9.	9.	9.	9.	8.	8.	6.	4.	5.	5.	5.	5.	

TOTAL NUMBER OF OBSERVATIONS = 8846 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 200 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	20	6	6	11	13	6	2	3	1	1	1	2	4	3	3	3	1	3	1	3	8	2	1	1	5.
2	1	3	2	1	1	2	1	1	2	5	2	7	9	9	12	13	15	15	6	2	1	1	3	2	5.
3	4	4	2	3	7	2	4	5	3	2	1	3	2	1	5	4	4	12	3	1	1	1	4	2	4.
4	1	1	1	1	1	1	5	5	4	3	2	4	12	8	8	10	7	10	17	12	5	3	5	6	6.
5	2	4	8	6	2	2	3	1	4	5	7	11	11	15	12	10	8	6	2	1	1	2	1	2	6.
6	2	1	1	1	1	1	1	1	1	1	1	3	5	4	2	1	6	11	13	12	12	14	6	17	5.
7	18	17	13	8	1	3	7	3	7	3	4	4	7	10	13	13	16	15	14	6	6	5	16	15	10.
8	9	9	15	10	4	4	6	7	4	11	15	16	16	15	16	13	11	4	5	6	19	34	36	10	13.
9	13	7	20	15	29	22	14	3	7	18	25	17	16	19	19	16	17	9	6	9	5	6	10	12	14.
10	13	12	9	9	7	7	6	5	2	4	5	4	4	6	6	10	5	4	2	3	2	1	2	3	6.
11	0	1	0	0	0	2	2	0	0	0	0	3	2	2	1	0	0	1	6	3	0	2	2	1	2.
12	1	4	1	1	1	3	1	1	1	1	1	3	5	5	3	5	6	4	3	1	1	2	1	1	3.
13	1	0	0	2	6	4	4	0	6	9	13	15	14	14	12	8	6	7	9	6	7	0	2	7	7.
14	11	5	2	3	3	2	1	1	3	2	1	2	4	3	5	6	4	3	3	1	1	1	1	2	3.
15	2	4	6	4	2	2	2	1	1	1	4	8	9	8	6	5	8	5	1	1	1	2	3	2	4.
16	1	2	3	1	1	1	2	1	2	1	3	3	4	4	3	6	2	5	4	1	1	1	1	1	3.
17	2	1	1	1	1	1	1	1	1	1	1	2	2	3	2	2	2	2	1	1	1	1	3	2	2.
18	1	7	9	5	2	0	5	3	2	0	3	9	8	7	10	6	3	1	4	1	1	1	1	1	4.
19	1	2	2	2	2	1	1	1	2	6	5	7	8	10	11	12	12	8	2	1	3	3	5	1	5.
20	1	1	1	1	1	1	1	1	1	2	2	3	3	2	3	2	2	2	3	1	3	1	2	1	2.
21	3	3	1	3	5	1	3	6	1	4	8	8	8	5	5	6	9	12	3	1	1	1	2	1	5.
22	2	2	1	2	1	1	1	1	1	4	5	4	7	9	6	6	5	5	4	1	1	1	1	2	3.
23	3	1	2	1	3	3	5	4	4	5	9	15	14	7	15	9	6	8	21	21	26	21	17	20	11.
24	20	14	16	11	4	6	7	5	7	5	8	5	10	9	7	12	15	12	7	5	3	3	1	1	9.
25	1	1	1	1	4	3	1	2	4	2	2	2	3	2	6	11	15	13	9	11	8	10	11	10	6.
26	8	14	8	4	7	5	4	6	3	6	5	11	7	8	12	17	17	17	7	5	6	8	6	8	9.
27	6	12	14	11	11	20	15	18	20	17	12	13	28	25	17	14	12	8	3	7	10	9	6	3	14.
28	4	6	6	5	1	0	0	0	3	2	2	2	3	6			11	14	9	10	3	2	2	3	5.
29	6	9	11	15	12	7	8	9	5	5	5	4	6	7	9	13	16	22	5	4	5	3	5	4	9.
30	6	10	11	6	18	12	13	12	2	10	10	8	7	10	11	8	8	7	4	1	1	1	1	1	8.
31	1	0	0	0	0	5	7	12	5	7	9	14	17	21	21	20	19	13	15	10	11	14	11	15	11.
MEAN	6.	6.	6.	5.	5.	5.	5.	4.	4.	5.	6.	7.	9.	9.	9.	9.	9.	9.	7.	5.	5.	5.	6.	6.	

TOTAL NUMBER OF OBSERVATIONS = 8844 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	10	293	293	297	316	299	237	215	110	53	104	134	50	359	27	52	322	213	199	189	186	119	142	145	163.
2	218	136	184	100	138	175	136	140	84	105	17	251	220	215	207	206	202	190	95	105	128	125	106	85	150.
3	107	129	132	111	144	78	96	126	83	77	77	246	303	77	19	13	300	237	113	115	37	201	202	164	109.
4	168	248	137	227	195	235	177	134	136	86	41	261	209	194	174	201	228	194	195	157	307	319	233	275	201.
5	246	275	287	280	239	273	126	182	277	305	340	336	327	326	335	335	318	295	289	218	234	225	190	218	276.
6	272	201	175	147	200	339	263	153	175	297	295	11	4	43	58	190	172	169	173	178	182	182	130	189	186.
7	193	172	173	159	100	137	142	95	169	124	64	51	213	209	209	193	183	190	191	196	164	136	196	184	185.
8	174	144	213	79	91	93	88	118	111	166	181	190	201	193	203	199	177	146	154	161	198	189	181	145	161.
9	168	199	174	151	183	179	187	83	66	182	194	210	229	224	213	232	226	242	304	293	284	278	321		212.
10	341	332	309	304	311	294	283	277	229	279	299	324	337		349	341	23	360	220	221	218	305	105	225	300.
11	229	209	281	117	253	277	141	61	258	305	18	320	322	325	102	162	358	310	268	258	150	142	168	244	256.
12	263	277	173	99	347	271	244	86	250	22	30	359	306	320	360	317	281	244	221	135	138	241	252	177	275.
13	177	206	120	123	135	130	136	168	124	154	193	199	219	216	212	219	170	159	135	115	124	127	130	177	160.
14	148	82	92	93	112	221	15	250	141	118	53	14	8	325	16	10	20	141	249	166	260	234	302	281	59.
15	203	170	70	178	203	270	240	122	16	136		317	317		350	332	309	253	212	184	118	49	233	234	228.
16	190	171	163	208	80	292	275	150	137	101	41	21	22	20	8	334	303	265	273	238	238	17	272	355	302.
17	3	109	360	268	122	22	349	79	4	38	18	231	328	28	8	328	297	236	229	201	255	195	105	255	337.
18	312	190	174	179	129	106	154	139	110	100	81	214	216	213	219	276	276	208	209	190	196	189	187	296	188.
19	142	67	231	248	234	224	14	209	81	265	304	298	296	334	8	13	12	328	242	266	254	249	222	293	281.
20	351	37	221	157	310	204	107	131	114	109	75	345	308	320	21	332	288	240	226	193	168	208	127	155	181.
21	127	136	128	148	141	108	124	129	98	136	197	198	209	197	229	225	253	236	219	126	236	222	232	102	173.
22	168	225	266	224	229	207	21	288	135	97	94	40	6	5	6	355		345	237	193	264	224	71	233	257.
23	206	202	158	114	133	120	130	136	102	182	205	200	192	202	215	205	175	175	205	208	202	198	188	199	179.
24	201	198	204	216	287	158	277	256	254	272	292	316	327	342	2	355	9	360	308	268	285	58	167	183	279.
25	165	312	133	218	198	215	116	201	146	89	182	42	35	83	198	213	200	204	150	188	150	158	129	148	164.
26	125	169	132	77	102	98	112	112	78	161	203	219	209	225	213	205	191	181	141	127	111	118	117	118	146.
27	146	161	190	173	169	205	203	206	216	217	227	293	292	293	323	343	333	335	274	8	303	276	228	203	244.
28	206	208	206	181	29	181	152	195	148	109	2	215	40	229			202	201	133	96	84	101	64	105	151.
29	113	128	161	185	131	88	122	89	85	89	185	219	198	176	207	205	206	197	92	113	127	112	123	119	143.
30	143	161	148	131	201	179	192	188	125	211	212	299		309	343	321	317		251	312	246	246	221	118	214.
31	147	254	225	95	146	164	186	197	191	198	208	205	209	208	213	212	211	212	202	200	187	202	209	210	197.
MEAN	180.	185.	180.	162.	164.	189.	154.	153.	129.	129.	86.	276.	287.	272.	312.	277.	263.	224.	210.	183.	198.	190.	176.	188.	

TOTAL NUMBER OF OBSERVATIONS = 8628 MEAN = 190.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 100 FEET
TRAILER NO, - 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	296	292	292	297	303	230	207	160	23	72	116	49	291	354	30	289	179	200	135	162	86	115	59	345.
2	181	128	177	136	140	150	127	176	46	81	334	247	221	214	207	206	200	193	109	110	125	125	137	103	155.
3	136	149	136	131	171	107	99	145	141	119	92	219	243	91	333	327	278	209	111	46	329	284	221	184	149.
4	79	247	227	209	251	205	174	131	115	82	35	301	216	201	183	209	233	207	203	165	298	302	237	254	211.
5	269	295	290	286	264	271	157	200	279	297	310	318	310	316	317	318	307	311	319	290	261	241	168	204	282.
6	270	190	301	82	162	162	253	189	185	281	287	323	329	23	66	174	170	172	177	192	191	177	149	189	196.
7	190	167	173	166	102	136	176	106	167	120	207	207	207	208	207	192	183	191	191	192	173	167	195	189	177.
8	168	156	189	189	151	153	155	155	143	167	177	189	199	190	200	196	177	151	162	171	196	185	177	149	173.
9	176	201	178	167	183	181	175	114	85	185	196	213	233	228	217	233	229	267	310	308	304	298	313	321	220.
10	324	316	308	306	308	304	299	296	246	282	302	308	315	339	339	334	359	42	101	177	155	298	79	126	315.
11	195	87	272	133	337	249	176	56	196	253	309	291	293	288	268	176	319	324	259	259	123	98	123	117	244.
12	229	267	247	93	34	66	214	5	88	151	360	307	300	302	306	303	287	272	247	155	97	201	265	129	267.
13	144	216	32	92	132	133	132	157	148	165	192	107	214	213	209	214	173	163	153	151	156	117	123	163	161.
14	186	157	93	119	162	177	304	217	17	83	48	288	315	286	299	326	345	50	251	107	147	1	356	273	331.
15	208	179	223	156	171	187	240	96	19	119	342	309	315	330	333	321	313	292	204	157	79	335	138	172	233.
16	187	160	182	169	168	46	321	105	104	94	31	2	354	351	343	319	281	258	286	228	53	13	292	278	333.
17	293	90	21	296	121	111	296	327	28	190	355	305	301	305	301	300	283	266	176	242	325	212	83	249	297.
18	191	176	176	162	142	140	153	138	108	95	168	210	212	207	214	280	291	206	196	180	189	168	224	316	184.
19	78	56	48	257	249	217	222	10	77	285	278	300	298	333	11	18	10	354	249	289	287	272	251	263	306.
20	10	54	252	52	322	214	326	276	92	106	38	340	298	277	357	321	293	263	236	206	151	156	107	143	308.
21	124	135	126	140	142	112	84	125	100	151	199	200	208	189	220	215	225	209	210	94	164	221	257	99	165.
22	118	121	220	187	213	188	156	263	130	103	86	179	329	331	338	317	56	338	252	121	121	192	66	174	157.
23	201	159	134	97	136	136	142	137	117	179	195	200	191	215	215	204	192	185	206	208	202	198	190	198	178.
24	200	199	204	209	250	194	278	273	261	281	300	322	329	346	346	351	356	337	298	270	293	29	105	154	284.
25	181	328	142	172	175	168	77	178	160	125	188	39	45	73	196	212	199	201	170	181	163	172	141	152	161.
26	170	175	152	117	134	116	147	139	111	168	202	217	195	209	198	206	193	185	160	160	130	134	155	126	162.
27	173	165	187	175	182	199	196	198	208	209	222	291	289	289	302	319	316	325	283	352	312	288	248	232	246.
28	215	217	214	216	309	135	115	143	167	143	114	241	346	209			202	197	177	194	102	115	96	127	170.
29	139	170	183	194	185	173	184	172	123	102	185	212	197	181	209	205	201	200	130	131	145	138	154	153	170.
30	159	183	172	149	197	181	192	192	164	209	208	289	287	299	314	305	300	293	229	302	255	261	250	34	235.
31	98	165	71	40	109	174	191	197	193	201	211	208	214	213	216	214	212	212	202	201	192	201	194	195	190.
MEAN	177.	173.	188.	159.	177.	166.	183.	164.	132.	151.	231.	262.	272.	265.	274.	267.	258.	234.	207.	185.	171.	196.	169.	172.	

TOTAL NUMBER OF OBSERVATIONS = 8765 MEAN = 197.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 200 FEET
TRAILER NO. = 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	4	282	289	294	298	311	242	214	217	233	78	117	34	297	346	22	273	166	196	136	159	231	128	2	264.
2	51	133	183	298	109	146	155	4	38	91	288	240	220	215	209	208	203	200	146	135	150	148	186	178	172.
3	184	181	172	165	190	159	121	177	191	159	150	217	245	114	353	331	277	205	179	42	244	318	234	202	192.
4	156	121	185	181	154	256	165	136	121	92	36	276	214	198	183	207	228	209	203	171	300	303	236	228	193.
5	288	295	304	292	95	259	189	230	303	295	328	336	327	334	336	337	329	344	328	37	266	267	166	165	303.
6	247	165	300	83	135	122	234	199	175	260	283	341	313	3	33	161	173	180	190	198	203	195	187	196	200.
7											214	213	215	216	214	200	195	200	200	189	188	185	205	202	202.
8	195	194	200	189	193	200	199	197	193	183	189	198	207	198	207	203	192	172	175	190	203	176	167	184	191.
9	193	206	191	187	194	193	191	157	178	196	204	221	238	233	222	237	234	270	318	314	312	314	322	333	229.
10	324	332	323	316	322	322	319	313	264	283	306	322	312	355	353	341	10	31	66	142	128	259	21	105	333.
11	92	87	272	188	49	204	198	48	121	191	271	274	278	274	247	165	292	331	254	258	173	98	116	111	207.
12	108	255	224	120	64	70	170	182	126	193	288	305	293	295	286	299	284	289	265	109	128	167	209	147	219.
13	137	181	282	128	151	154	151	161	176	183	199	204	219	219	214	217	180	173	178	187	188	192	194	176	184.
14	188	186	160	144	198	186	110	206	26	115	12	303	312	288	293	328	347	27	257	140	124	336	58	270	235.
15	224	181	181	123	164	96	241	258	294	175	328	307	320	340	336	330	316	329	314	189	138	51	79	87	281.
16	204	140	187	72	122	87	324	217	112	85	44	18	347	340	333	326	3	252	285	250	126	60	37	283	24.
17	241	230	140	10	115	113	263	91	89	96	15	302	296	296	295	296	252	280	131	10	42	279	70	145	338.
18	191	189	183	168	179	162	167	140	113	59	197	216	219	213	220	286	306	101	190	191	174	175	290	246	194.
19	243	80	91	233	239	226	192	357	43	306	270	280	285	320	345	360	360	348	243	290	359	296	273	254	297.
20	187	153	277	95	123	224	287	17	159	111	58	344	302	321	355	323	287	259	230	203	154	136	121	145	199.
21	133	154	129	126	158	187	130	148	120	168	207	209	214	203	226	222	231	221	217	65	62	196	251	203	178.
22	108	116	114	125	176	242	35	309	145	116	95	93	337	338	335	332	41	355	281	129	107	168	166	169	104.
23	193	144	153	168	159	173	172	174	177	199	198	205	196	215	217	211	192	191	210	209	209	210	207	211	192.
24	208	208	212	213	240	215	275	308	270	287	299	318	317	334	350	341	346	342	307	287	310	14	97	158	290.
25	224	226	174	174	174	191	94	182	178	182	196	36	43	79	208	218	207	210	196	196	190	187	164	181	183.
26	196	195	185	189	170	157	190	196	195	188	204	222	203	215	201	208	198	193	185	184	158	164	178	145	188.
27	181	168	186	181	190	198	194	197	205	207	219	284	280	280	299	319	316	328	305	4	317	291	262	262	249.
28	241	237	241	240	251	139	141	165	181	166	169	190	309	221			209	210	206	202	176	182	185	158	198.
29	187	197	197	208	203	197	198	201	182	132	197	220	208	191	216	211	207	208	187	177	183	189	193	192	195.
30	193	198	196	181	205	203	202	202	201	215	213	287	288	302	326	312	306	293	247	308	278	291	51	94	245.
31	89	102	128	267	203	193	201	207	203	208	216	214	218	218	222	219	218	218	210	211	203	210	216	204	204.
MEAN	189.	178.	196.	176.	171.	184.	190.	192.	169.	176.	231.	262.	271.	267.	276.	272.	261.	242.	223.	192.	179.	213.	179.	184.	

TOTAL NUMBER OF OBSERVATIONS = 8667 MEAN = 208.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1																									
2																									
3																									
4																									
5																									
6																									
7													0	4	5	3	3	2	2	-1	0	-3	1	0	1.
8	-1	0	-2	-6	-1	-2	-6	0	-1	3	7	7	7	6	7	6	2	0	2	0	3	6	5	3	1.
9	6	0	8	2	4	3	0	0	5	12	15	15	16	18	18	17	15	12	12	13	8	7	13	15	10.
10	15	11	9	9	7	5	3	2	0	3	6	2	0	8	11	16	9	-7	-1	3	-2	1	1	2	5.
11	3	3	5	1	1	2	0	-2	0	-12	-1	8	5	2	-1	-12	-1	-10	9	3	0	4	2	-3	0.
12	1	5	-1	-19	-10	-8	4	-4	-3	-12	0	4	7	9	6	10	11	8	10	-6	-18	1	2	0	0.
13	1	-8	-3	4	11	8	6	7	7	8	15	16	16	18	16	14	13	15	13	12	8	5	7	11	9.
14	4	4	17	18	-24	-2	-3	8	-10	0	0	7	12	6	16	19	15	2	14	1	4	0	-2	8	5.
15	9	3	6	17	5	1	5	2	-16	-16	8	14	16	17	16	10	14	7	5	0	-8	-3	0	0	5.
16	2	-2	-4	0	1	-7	3	-2	7	0	14	15	18	17	16	16	0	16	8	0	-15	-3	7	-5	4.
17	-1	-18	-18	-9	-16	-19	0	-18	-14	-18	1	7	6	7	5	5	6	0	-6	2	3	-3	-7	1	-5.
18	-9	-9	-4	0	4	2	8	11	6	-3	-5	11	11	9	11	9	0	0	6	3	3	0	-7	-11	2.
19	-15	-21	0	5	0	-15	-24	-12	-12	2	5	6	8	12	13	12	12	5	1	0	-1	0	0	-6	-1.
20	-12	-15	-6	-1	-2	9	10	17	20	16	3	3	0	0	2	0	0	1	3	-7	-1	-5	-1	2	1.
21	4	5	4	2	6	7	1	7	7	1	5	5	4	1	13	35									7.
22												-3	-4	-4	-7	-6	-17	-24	-22	-30	-26	-4	0	-17	-14.
23	-24	-20	-11	-17	-13	-12	-14	-14	-11	-14	-2	-7	-7	-12	-7	-12	-12	-14	-5	-5	-5	-5	-7	-8	-12.
24	-8	-9	-9	-14	-21	-27	-14	-12	-7	-12	-7	-9	-6	-8	-11	-7	-8	-10	-12	-15	-26	-36	-27	-17	-15.
25	-12	-20	-10	-8	-7	-10	-10	-11	-14	-22	-23	-20	-11	-18	-5	0	0	-2	-8	-9	-2	-8	-2	-1	-11.
26	-7	-3	-6	-3	-2	-1	-5	-7	-3	-9	-1	0	0	0	0	0	0	0	-3	-9	-3	-2	-6	-1	-4.
27	-3	0	0	0	-1	1	0	5	4	4	4	8	10	9	10	9	7	3	0	3	1	0	0	-3	3.
28	0	1	-2	-14	-17	-5	-19	-6	-6	-21	-8	-8	-6	-1			-1	-5	-11	-24	-2	-1	0	0	-8.
29	0	-3	-4	0	-10	-17	-17	-4	1	4	4	0	4	8	12	12	11	12	7	9	11	11	11	9	3.
30	6	2	8	10	14	5	9	5	3	15	16	18	18	20	23	19	18	12	3	-12	4	1	-15	-9	8.
31	10	11	0	-2	-9	6	9	10	-2	13	14	16	16	16	15	14	13	10	9	2	7	7	2	9	8.
MEAN	-1.	-4.	-2.	-2.	-4.	-4.	-3.	-1.	-2.	-3.	3.	5.	6.	6.	8.	6.	5.	1.	1.	-3.	-3.	-2.	-1.	-2.	

TOTAL NUMBER OF OBSERVATIONS = 6747 MEAN = 0.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 100 FEET
TRAILER NO, - 23 PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	-11	-16	-17	-13	-12	-17	-22	-20	-31	-39	-27	-23	-22	-19	-20	-23	-27	-16	-25	-19	-13	-30	-19	-36	-23.
2	-36	-20	-25	-29	-26	-23	-32	-37	-26	-17	-25	-15	-10	-11	-10	-10	-10	-10	-16	-20	-23	-21	-27	-24	-23.
3	-24	-19	-21	-19	-19	-25	-17	-21	-30	-28	-33	-19	-20	-27	-19	-19	-18	-14	-28	-30	-33	-33	-25	-31	-25.
4	-42	-42	-34	-28	-41	-36	-18	-15	-16	-21	-21	-22	-12	-13	-15	-13	-17	-16	-10	-14	-19	-19	-24	-19	-23.
5	-35	-21	-16	-17	-34	-33	-36	-38	-36	-31	-17	-14	-12	-11	-13	-14	-15	-24	-31	-44	-36	-30	-40	-42	-28.
6	-37	-41	-45	-45	-43	-45	-44	-44	-43	-43	-43	-29	-23	-25	-30	-33	-16	-13	-12	-15	-12	-13	-17	-10	-31.
7	-10	-12	-12	-19	-27	-24	-25	-25	-17	-23	-18	-19	-15	-13	-12	-11	-11	-11	-11	-17	-16	-21	-12	-10	-18.
8	-16	-21	-11	-20	-29	-31	-30	-21	-29	-13	-10	-10	-11	-11	-11	-12	-15	-21	-21	-18	-8	-6	-7	-16	-18.
9	-11	-17	-12	-11	-7	-8	-12	-23	-19	-10	-10	-12	-14	-13	-15	-15	-14	-17	-19	-20	-19	-18	-19	-16	-16.
10	-13	-11	-14	-16	-16	-17	-19	-18	-19	-17	-15	-20	-22	-20	-16	-10	-15	-24	-41	-29	-35	-24	-23	-31	-22.
11	-33	-31	-21	-38	-36	-21	-29	-41	-37	-38	-30	-14	-14	-20	-22	-38	-26	-26	-13	-22	-34	-22	-20	-37	-29.
12	-37	-18	-35	-43	-40	-42	-27	-42	-45	-45	-33	-16	-13	-14	-20	-18	-16	-20	-22	-37	-42	-28	-34	-34	-31.
13	-20	-37	-41	-26	-15	-17	-18	-26	-17	-13	-11	-10	-10	-12	-13	-15	-19	-18	-19	-21	-22	-37	-32	-21	-22.
14	-22	-34	-24	-20	-26	-36	-37	-30	-30	-30	-34	-28	-23	-24	-22	-22	-20	-31	-24	-35	-33	-41	-40	-26	-30.
15	-24	-25	-24	-20	-35	-36	-21	-32	-38	-39	-21	-14	-15	-16	-17	-20	-17	-25	-38	-37	-37	-27	-32	-31	-28.
16	-31	-28	-25	-34	-29	-35	-28	-39	-25	-33	-24	-24	-20	-19	-23	-20	-32	-20	-25	-42	-43	-32	-35	-30	-31.
17	-38	-42	-43	-42	-42	-37	-28	-42	-44	-43	-34	-21	-21	-22	-22	-25	-24	-37	-43	-42	-30	-34	-27	-36	-36.
18	-43	-25	-21	-16	-27	-23	-15	-17	-20	-30	-30	-11	-12	-11	-10	-13	-25	-30	-17	-26	-27	-35	-35	-30	-24.
19	-41	-41	-31	-13	-15	-23	-40	-37	-26	-15	-12	-11	-10	-9	-10	-10	-8	-14	-18	-21	-25	-22	-16	-41	-23.
20	-43	-42	-43	-43	-42	-35	-44	-43	-38	-21	-21	-17	-17	-22	-22	-22	-21	-18	-19	-39	-26	-31	-24	-20	-31.
21	-19	-21	-21	-21	-17	-29	-28	-16	-19	-20	-14	-14	-15	-16	-19	-16	-15	-15	-32	-37	-40	-35	-27	-35	-24.
22	-19	-37	-41	-30	-31	-35	-44	-37	-36	-19	-17	-21	-14	-13	-14	-17	-21	-21	-27	-38	-41	-39	-42	-31	-30.
23	-24	-31	-18	-34	-23	-24	-18	-17	-19	-16	-16	-8	-8	-13	-8	-9	-17	-12	-7	-8	-6	-7	-8	-8	-16.
24	-8	-9	-8	-9	-21	-20	-15	-16	-12	-14	-11	-15	-11	-11	-13	-11	-9	-9	-13	-15	-25	-27	-35	-30	-17.
25	-25	-32	-35	-36	-24	-36	-29	-27	-21	-33	-22	-19	-20	-31	-18	-11	-9	-10	-14	-12	-13	-10	-13	-12	-23.
26	-16	-12	-14	-22	-15	-16	-20	-21	-27	-19	-15	-9	-13	-12	-10	-9	-9	-9	-15	-18	-14	-15	-18	-14	-17.
27	-17	-12	-9	-11	-10	-7	-8	-10	-9	-9	-11	-13	-7	-6	-8	-9	-10	-13	-21	-15	-12	-13	-18	-20	-13.
28	-15	-13	-14	-20	-30	-27	-36	-36	-22	-31	-25	-23	-21	-19			-13	-13	-23	-22	-26	-25	-24	-21	-24.
29	-18	-16	-11	-12	-13	-26	-23	-22	-22	-17	-15	-18	-16	-15	-13	-9	-9	-9	-19	-18	-15	-20	-15	-18	-18.
30	-18	-13	-12	-14	-8	-14	-9	-10	-26	-9	-10	-10	-8	-8	-9	-9	-11	-12	-19	-36	-33	-36	-39	-38	-19.
31	-19	-35	-30	-35	-35	-14	-10	-8	-14	-10	-9	-8	-8	-7	-7	-7	-7	-9	-8	-9	-9	-8	-11	-9	-15.
MEAN	-26.	-26.	-25.	-26.	-27.	-28.	-27.	-28.	-28.	-25.	-22.	-18.	-16.	-17.	-17.	-17.	-17.	-19.	-23.	-27.	-26.	-26.	-26.	-27.	

TOTAL NUMBER OF OBSERVATIONS = 8844 MEAN = -23.

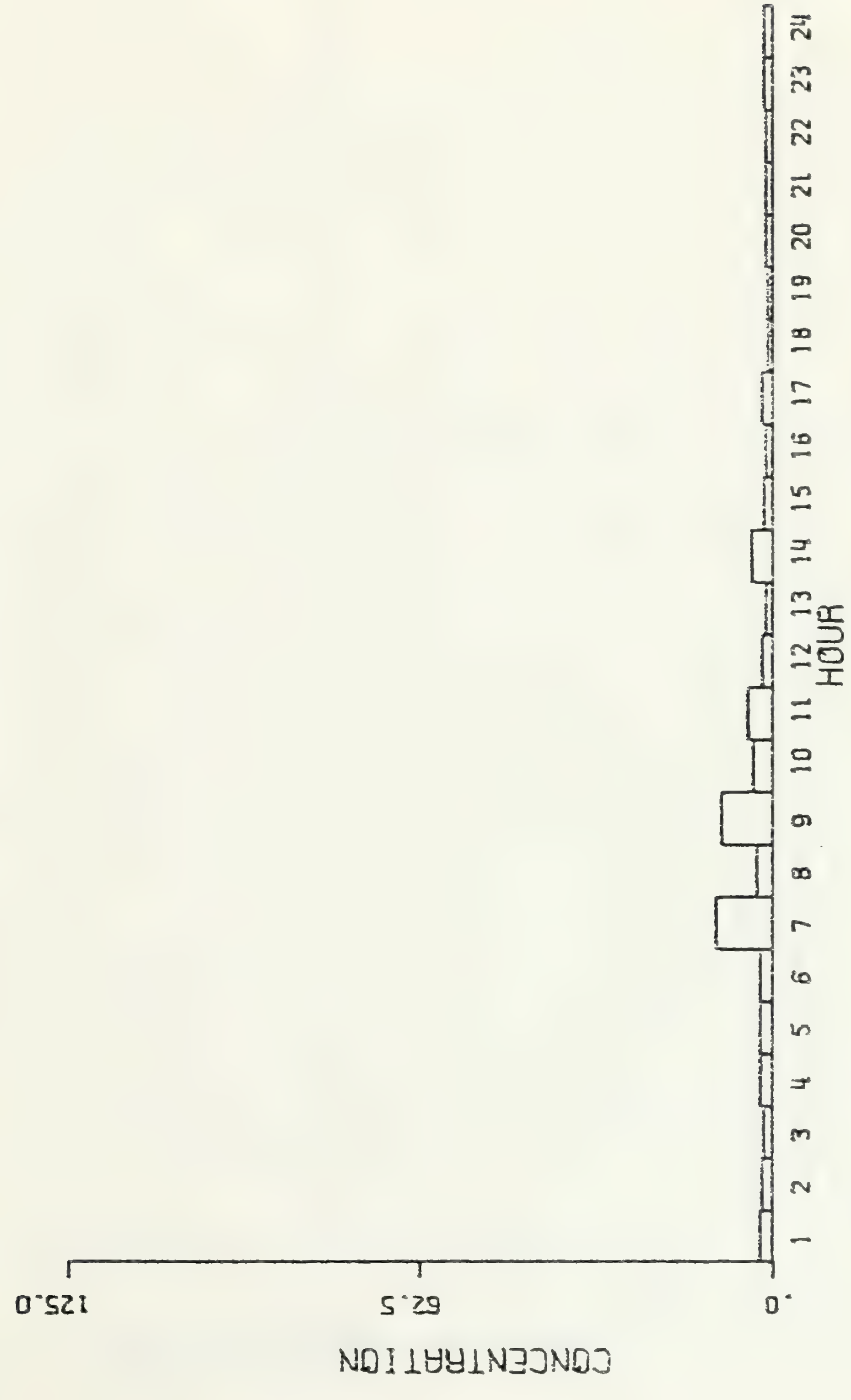
: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 200 FEET
TRAILER NO. - 23 PERIOD(12/ 1/76 TO 12/31/76)

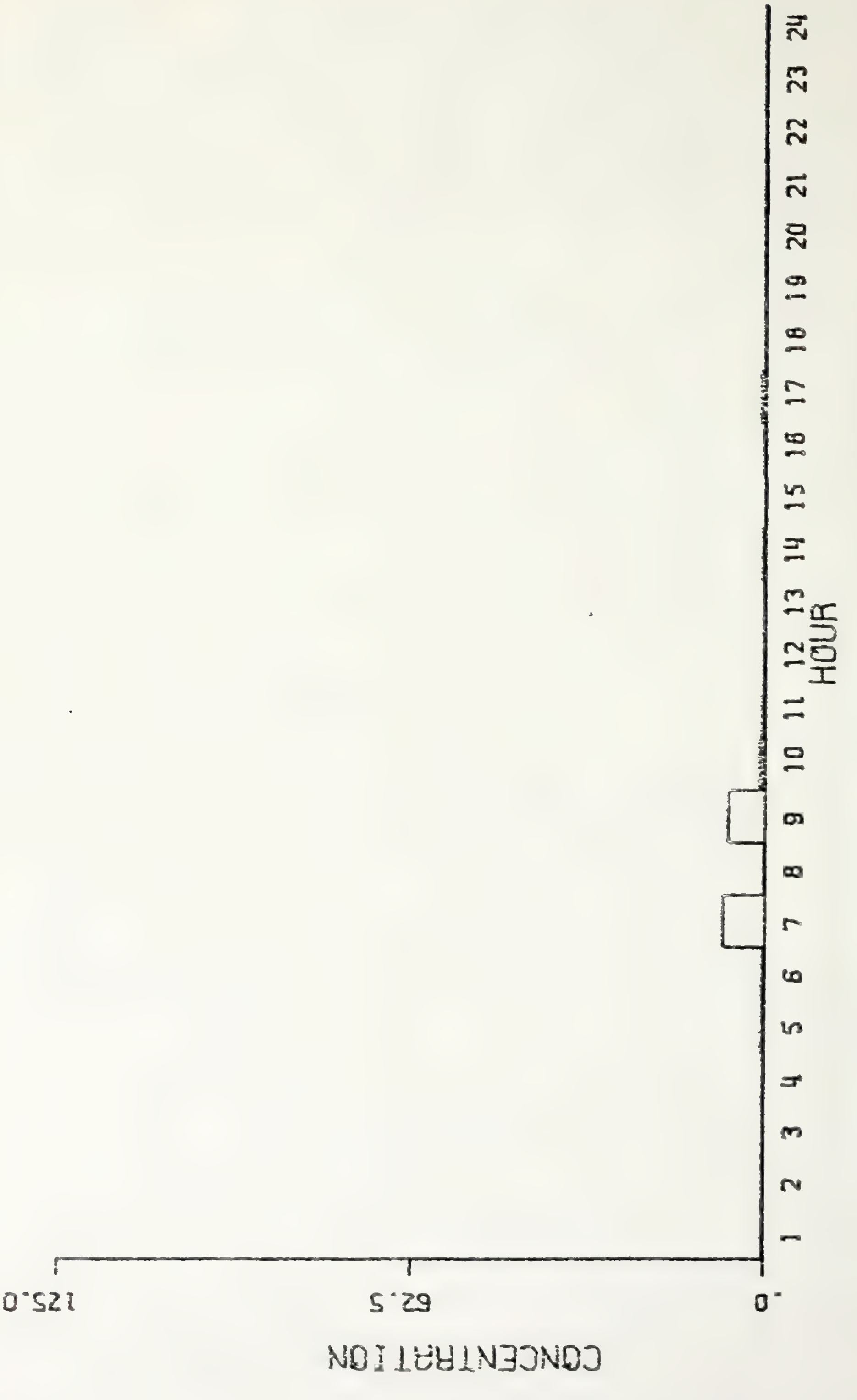
DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	-5	-5	-6	-7	-6	-6	-9	-16	-18	-19	-5	-3	-4	-1	0	-4	-5	-5	-2	-7	-10	-5	-9	-3	-8.
2	2	-12	-10	0	-9	-9	2	3	-4	-8	-1	-5	-9	-13	-14	-11	-11	-9	-2	-5	-4	-5	-4	2	-7.
3	4	3	6	3	4	7	-3	-5	-3	-4	-5	-7	1	12	-10	-8	-6	-11	-1	10	9	-1	31	27	2.
4	11	13	12	3	-1	6	-11	-13	-15	-14	-3	3	-12	-7	-7	-12	-9	-11	-6	-11	-6	-5	-5	-11	-6.
5	-3	-7	-8	-4	0	-11	-26	-34	-26	-23	-14	-12	-9	-9	-9	-10	-11	-11	-16	-35	-33	-32	-45	-36	-19.
6	-37	-40	-44	-44	-44	-46	-46	-46	-47	-45	-44	-30	-21	-23	-18	-15	-14	-13	-15	-17	-14	-13	-15	-16	-31.
7	-18	-19	-18	-10	0	-9	-13	-4	-9	-9	-8	-4	-10	-12	-14	-12	-13	-15	-14	-11	-12	-10	-16	-16	-13.
8	-10	-7	-13	-9	-8	-6	-8	-9	-7	-7	-11	-13	-14	-14	-15	-13	-15	-9	-10	-6	-10	-13	-14	-9	-12.
9	-15	-11	-17	-11	-15	-16	-12	-9	-6	-13	-16	-13	-13	-15	-16	-14	-10	-5	-10	0	-1	-2	-10	-10	-12.
10	-10	-12	-12	-14	-15	-15	-14	-15	-9	-12	-10	-5	-3	-9	-9	-12	-10	-5	-4	-11	-7	-7	-10	-11	-11.
11	-5	-6	-4	-6	0	-6	-9	-1	0	-5	0	-10	-8	-8	6	7	-1	-3	-15	-11	-3	-10	-12	-7	-6.
12	-1	-9	-6	4	0	-5	0	0	1	0	0	-5	-8	-7	-7	-12	-16	-13	-12	-5	5	-5	0	-2	-5.
13	-11	0	0	-8	-17	-17	-17	-6	-14	-11	-17	-17	-17	-19	-18	-16	-17	-17	-12	-9	7	4	8	0	-11.
14	0	-1	-4	-10	-5	-5	4	2	-4	-3	-2	-7	-7	-4	-7	-11	-7	-2	27	39	37	32	6	0	2.
15	-5	-13	-10	-13	0	-4	-4	2	1	0	-8	-6	-8	-7	-5	-6	-10	-5	25	12	1	0	2	-2	-4.
16	0	-8	-12	-3	0	0	-5	2	-7	2	-12	-2	-9	-4	-6	-11	-1	17	39	11	18	7	16	-3	1.
17	1	37	23	11	12	0	0	0	4	28	3	-5	-6	-3	-6	-5	-7	20	15	5	3	2	-9	-3	5.
18	-7	-11	-15	-10	-8	-4	-16	-16	-14	-5	-1	-11	-9	-8	-9	-7	-3	1	-12	0	-2	3	8	0	-8.
19	6	0	-1	-5	-4	-1	0	2	-4	-10	-5	-10	-9	-8	-7	-8	-11	-7	-5	-1	-2	-3	-13	-4	-6.
20	-3	-7	-15	-17	-21	-32	-40	-43	-33	-17	-9	-7	-5	-1	-9	-11	-11	-12	-13	-1	-12	-4	-10	-9	-16.
21	-14	-14	-12	-9	-17	-5	-8	-18	-4	-12	-16	-17	-14	-7	-6	-13	-14	-13	-6	-3	1	2	-3	4	-10.
22	-8	-4	0	-4	0	9	5	2	2	-13	-10	-6	-9	-13	-8	-13	-11	-11	-9	-1	0	2	6	-5	-5.
23	0	1	-4	2	-5	-2	-7	-6	-2	-2	-6	-8	-6	1	0	0	0	-2	-5	-5	-4	-2	-3	-6	-4.
24	-8	-10	-12	-8	0	-4	-7	-7	-10	-7	-8	-4	-5	-1	0	-8	-11	-13	-13	-14	-2	-8	32	36	-5.
25	29	30	25	21	41	0	-2	-5	-16	-5	5	7	-1	-3	-5	-14	-5	22	0	4	-12	-5	-9	-11	3.
26	-10	-13	-9	-5	-14	-10	-15	-11	-7	-2	-6	-9	-8	-11	-11	-12	-10	23	39	18	17	33	-8	-11	-3.
27	-8	-8	-11	-10	-7	-10	-9	-12	-12	-12	2	-11	-10	-10	-16	-16	-16	-14	-10	-12	-14	-15	-12	-9	-12.
28	-15	-2	-10	-6	-1	0	0	-3	-9	-7	0	3	0	-9			-17	13	16	-5	-3	-7	-2	-8	-4.
29	-11	-14	-15	-18	-15	-10	-10	7	9	-12	-8	12	-9	-12	-12	-14	-15	-14	-7	-4	-4	-4	-11	-11	-10.
30	-7	-8	-8	-12	-11	-4	-7	-5	-3	-8	-11	-9	-9	-10	-9	-8	-11	-9	-10	3	0	1	3	1	-7.
31	-6	0	5	0	1	-9	-11	-7	-1	-7	-8	-9	-9	-7	-7	-7	-7	-9	-9	-5	-6	-7	-6	-11	-7.
MEAN	-6.	-6.	-8.	-7.	-6.	-8.	-11.	-10.	-10.	-10.	-9.	-8.	-10.	-9.	-10.	-11.	-11.	-6.	-3.	-3.	-3.	-3.	-5.	-6.	

TOTAL NUMBER OF OBSERVATIONS = 8831 MEAN = -7.

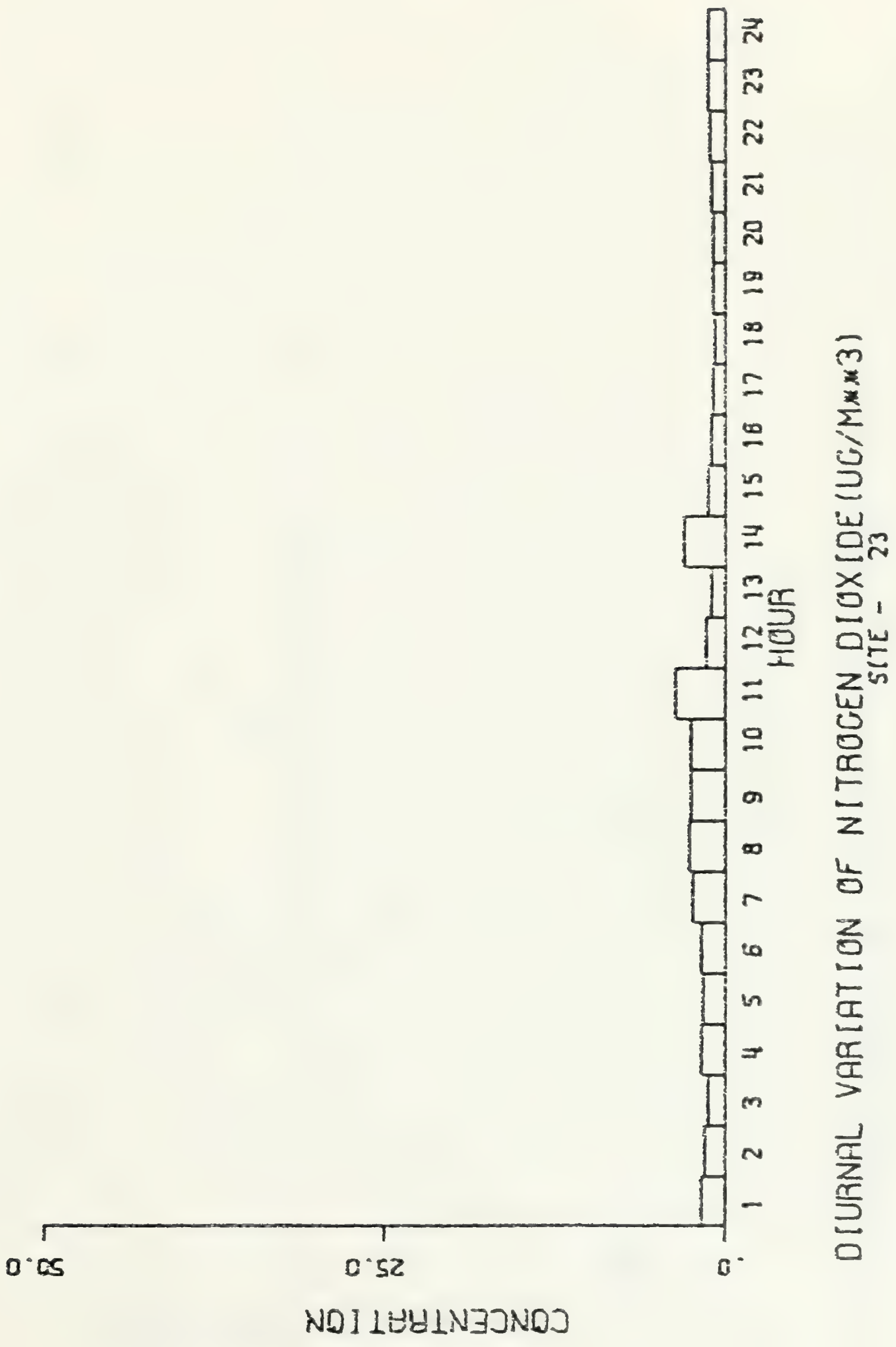
! INDICATES CALIBRATION DURING THE HOUR

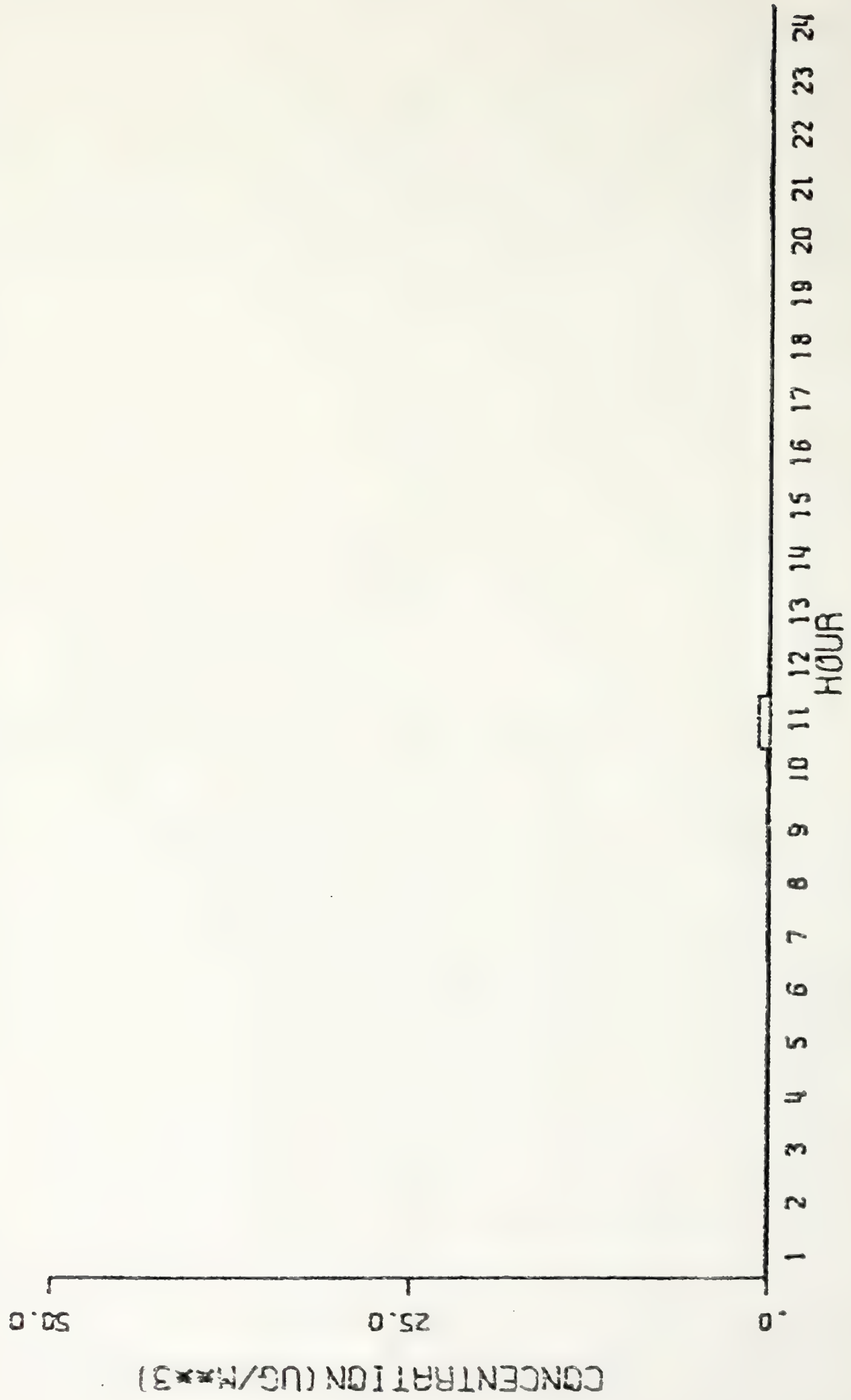


DIURNAL VARIATION OF NITROGEN OXIDES(UG/M**3)
SITE - 23

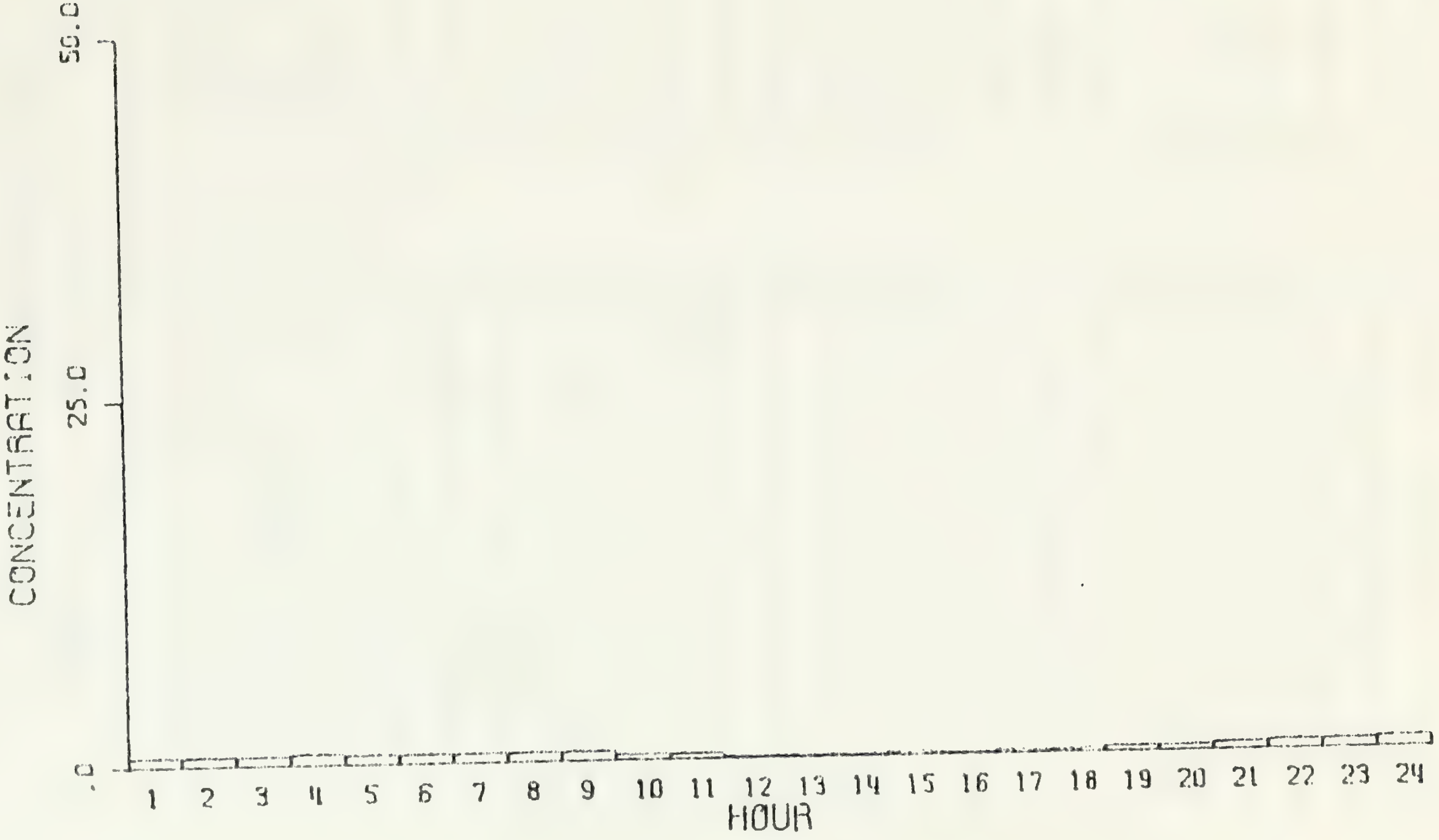


DIURNAL VARIATION OF NITRIC OXIDE(UG/M**3)
SITE - 23

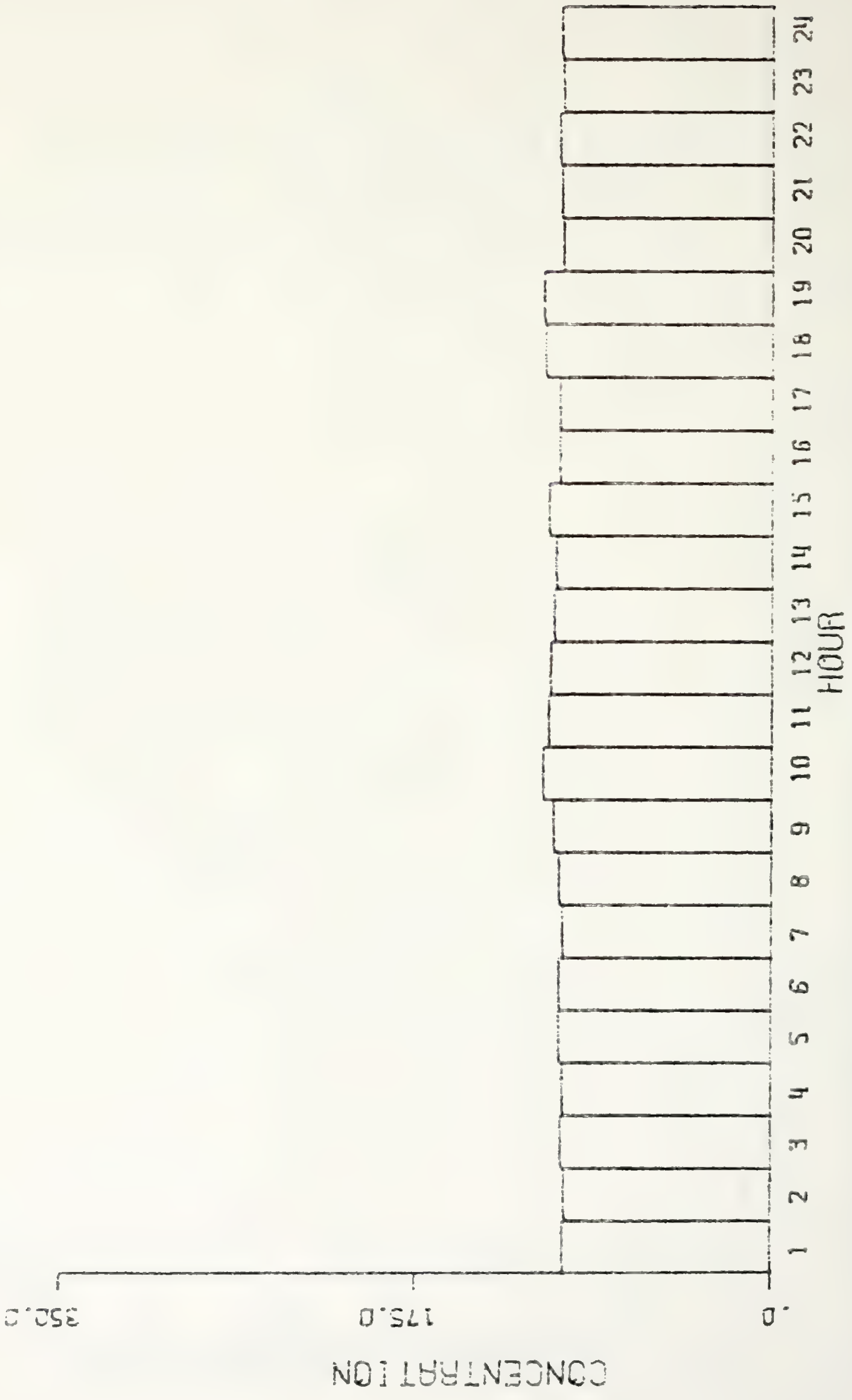

DIURNAL VARIATION OF NITROGEN DIOXIDE (UG/M**3)
SITE - 23



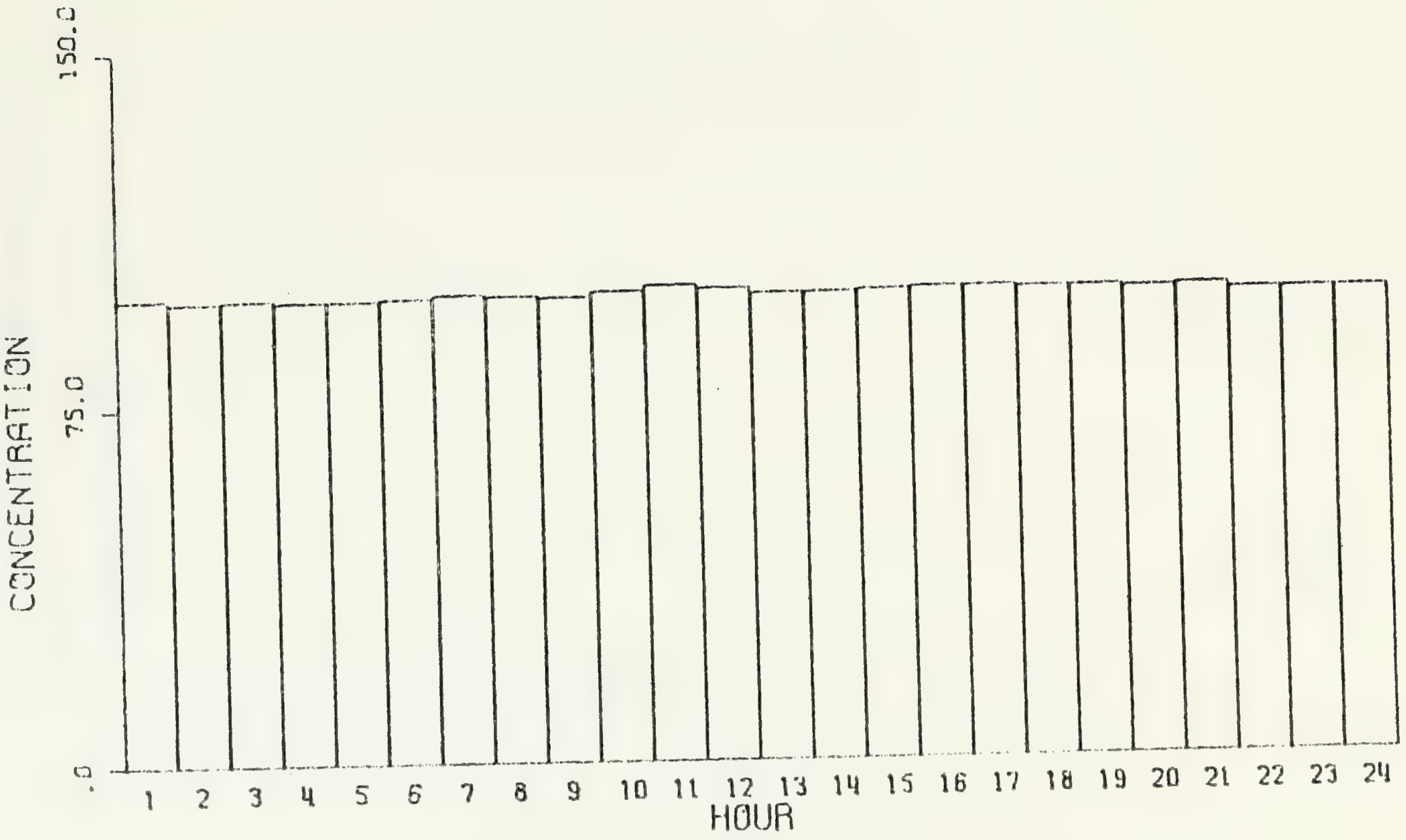
DIURNAL VARIATION OF SULFUR DIOXIDE (UG/M**3)
SITE - 23



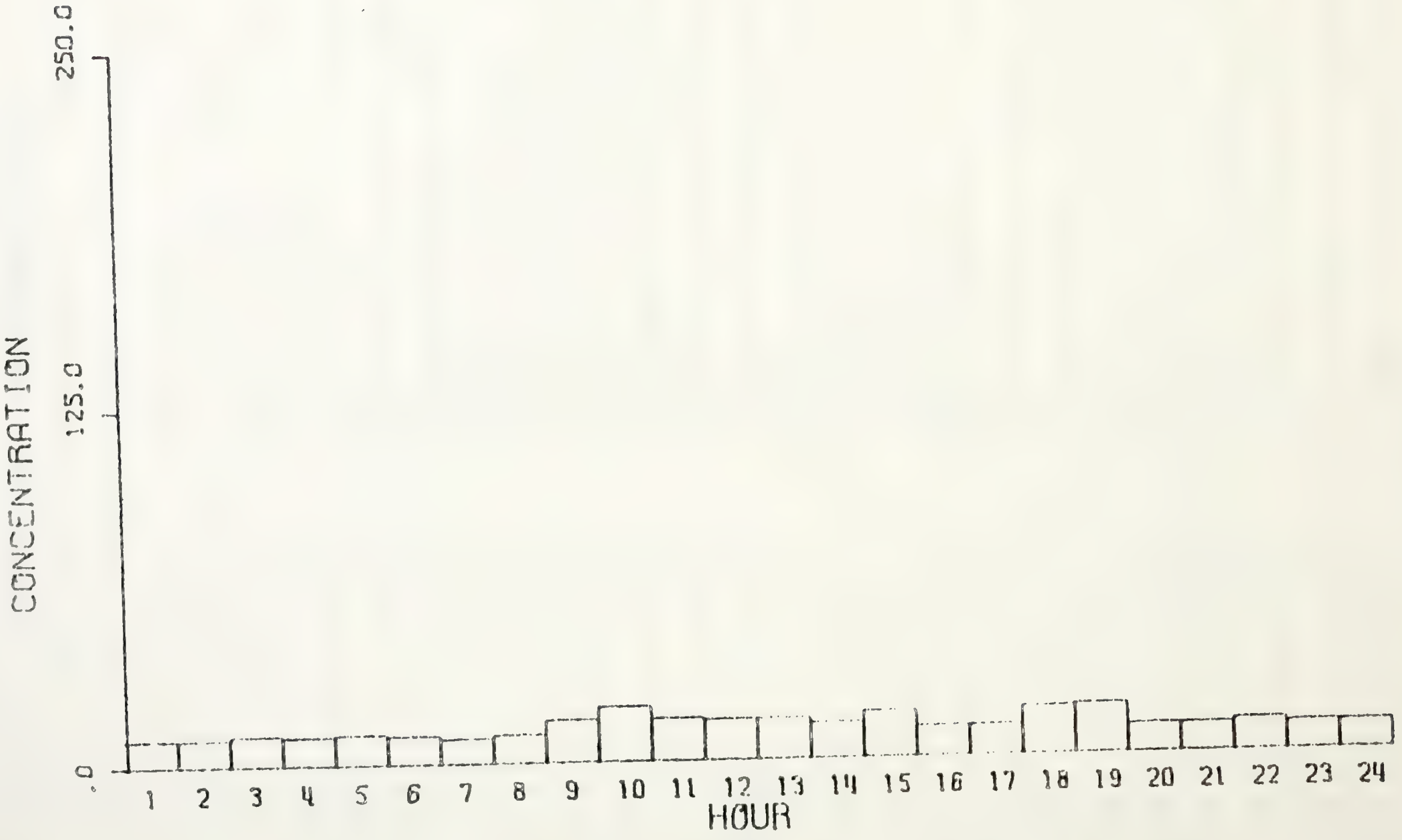
DIURNAL VARIATION OF HYDROGEN SULFIDE (UG/M**3)
SITE - 23



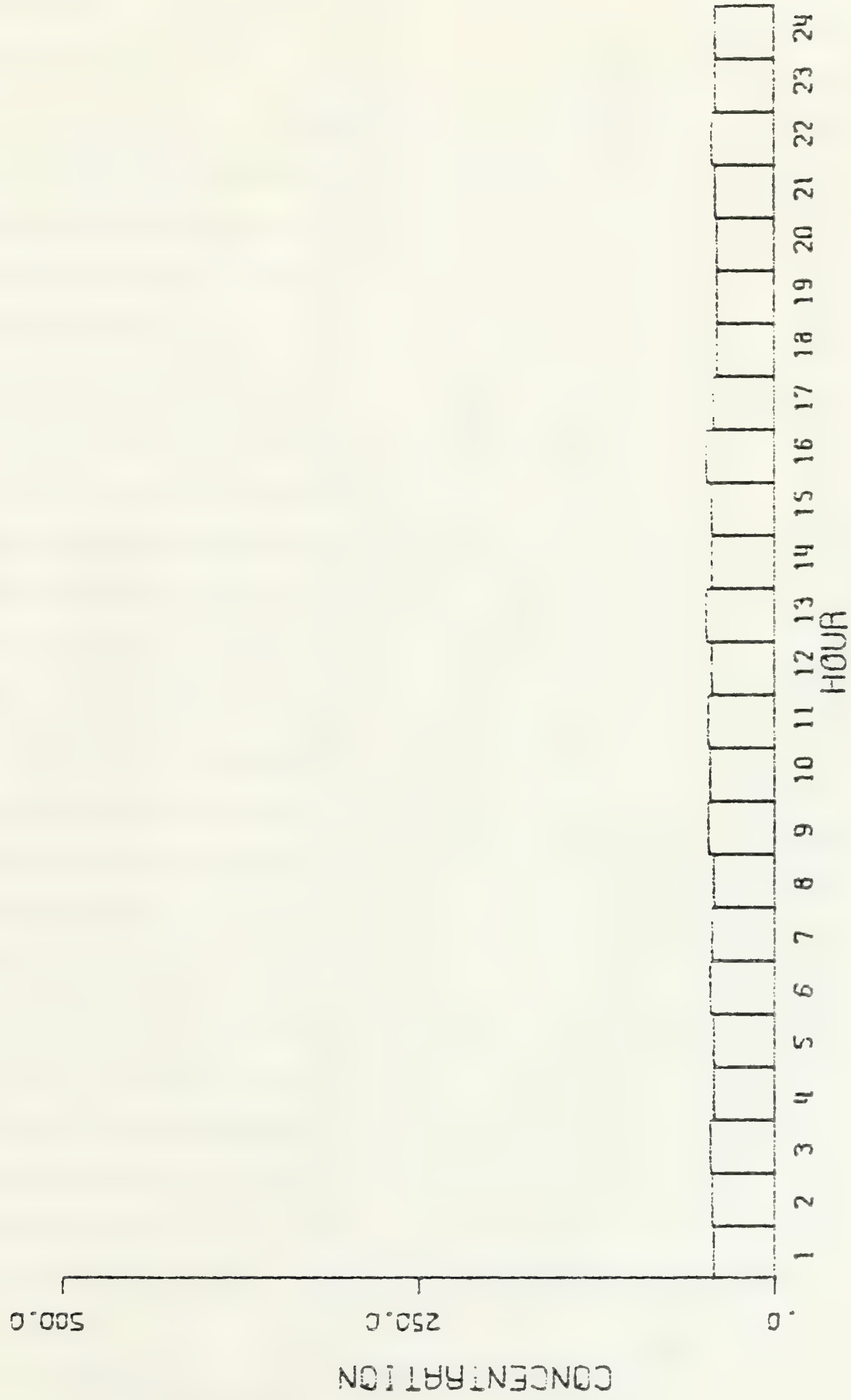
DIURNAL VARIATION OF TOTAL HYDROCARBONS(UG/M**3 X 10**-1)
SITE - 23



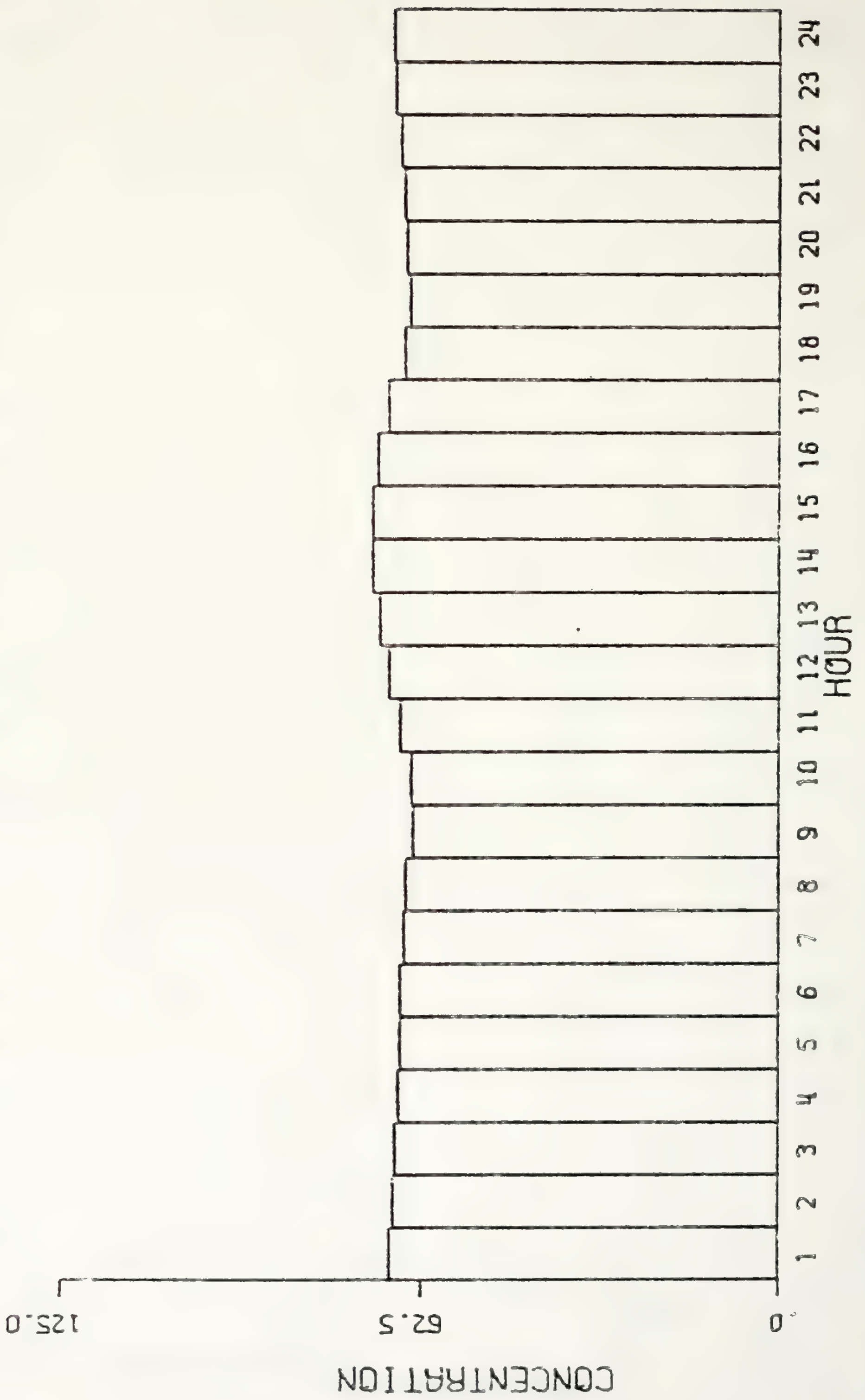
DIURNAL VARIATION OF METHANE(UG/M**3 X 10**-1)
SITE - 23



DIURNAL VARIATION OF NON-METHANE HYDROCARBONS(UG/M**3 X 10**-1)
SITE - 23

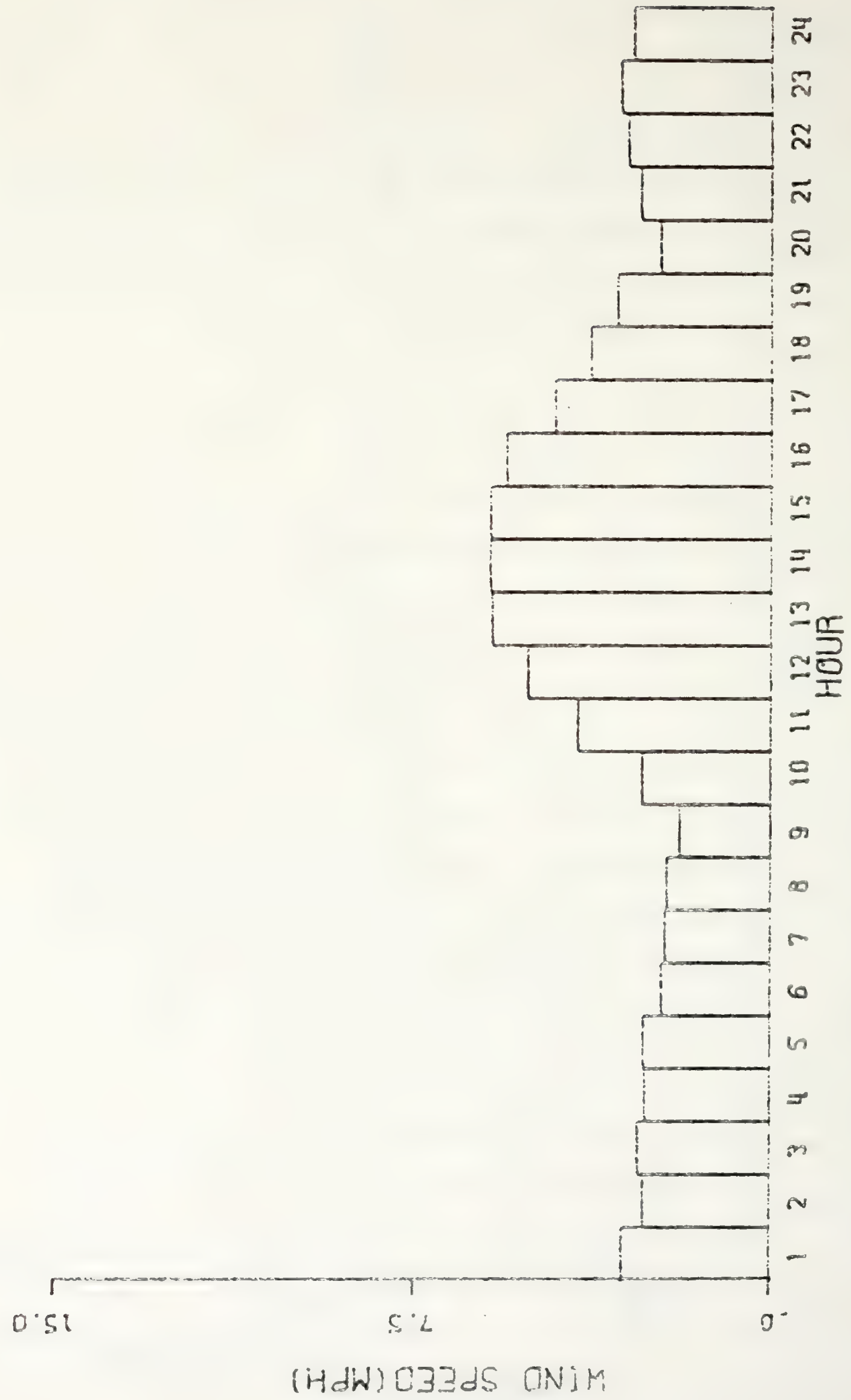


DIURNAL VARIATION OF CARBON MONOXIDE (UG/M**3 X 10**-1)
SITE - 23

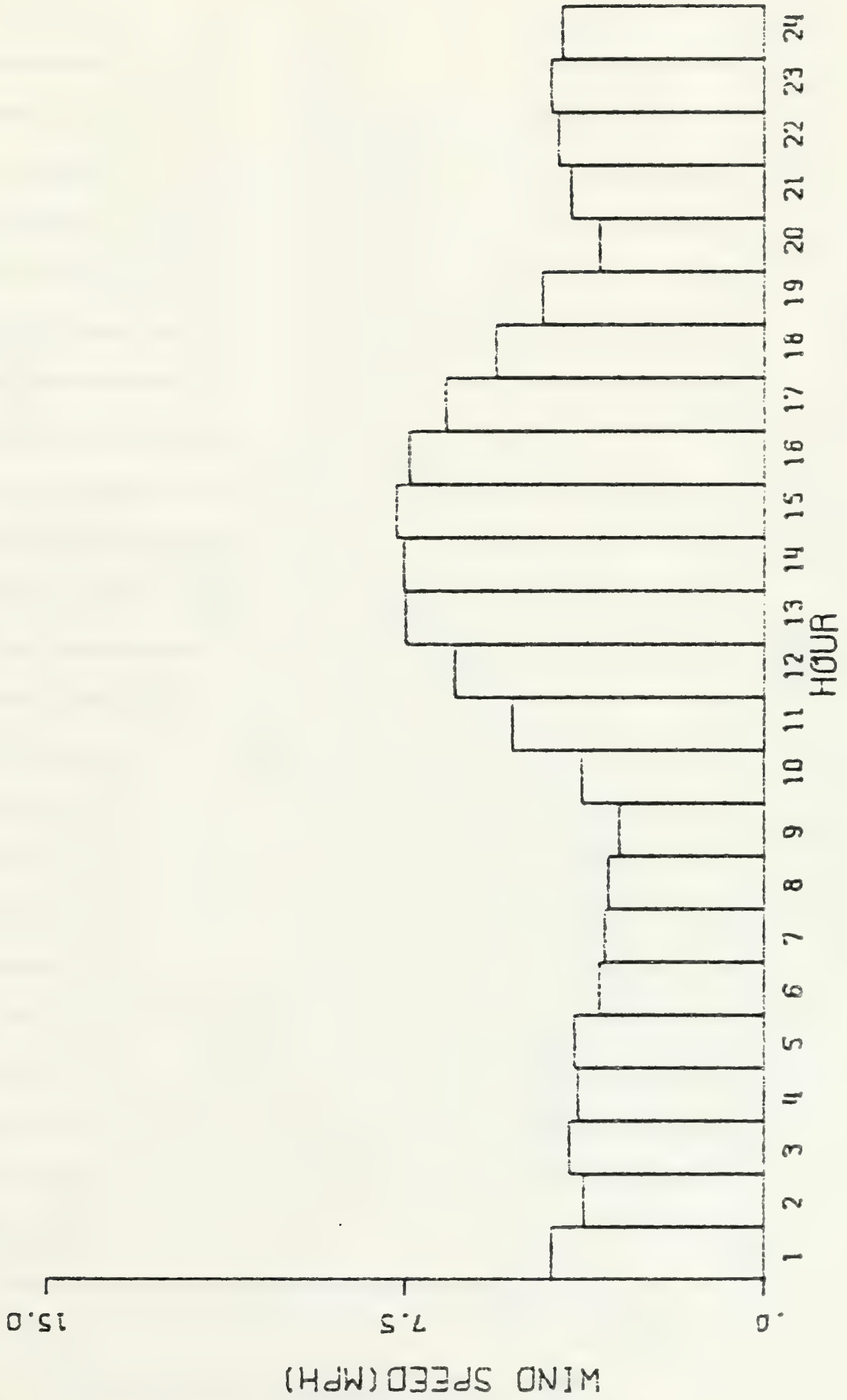


DIURNAL VARIATION OF OZONE (UG/M**3)
SITE - 23

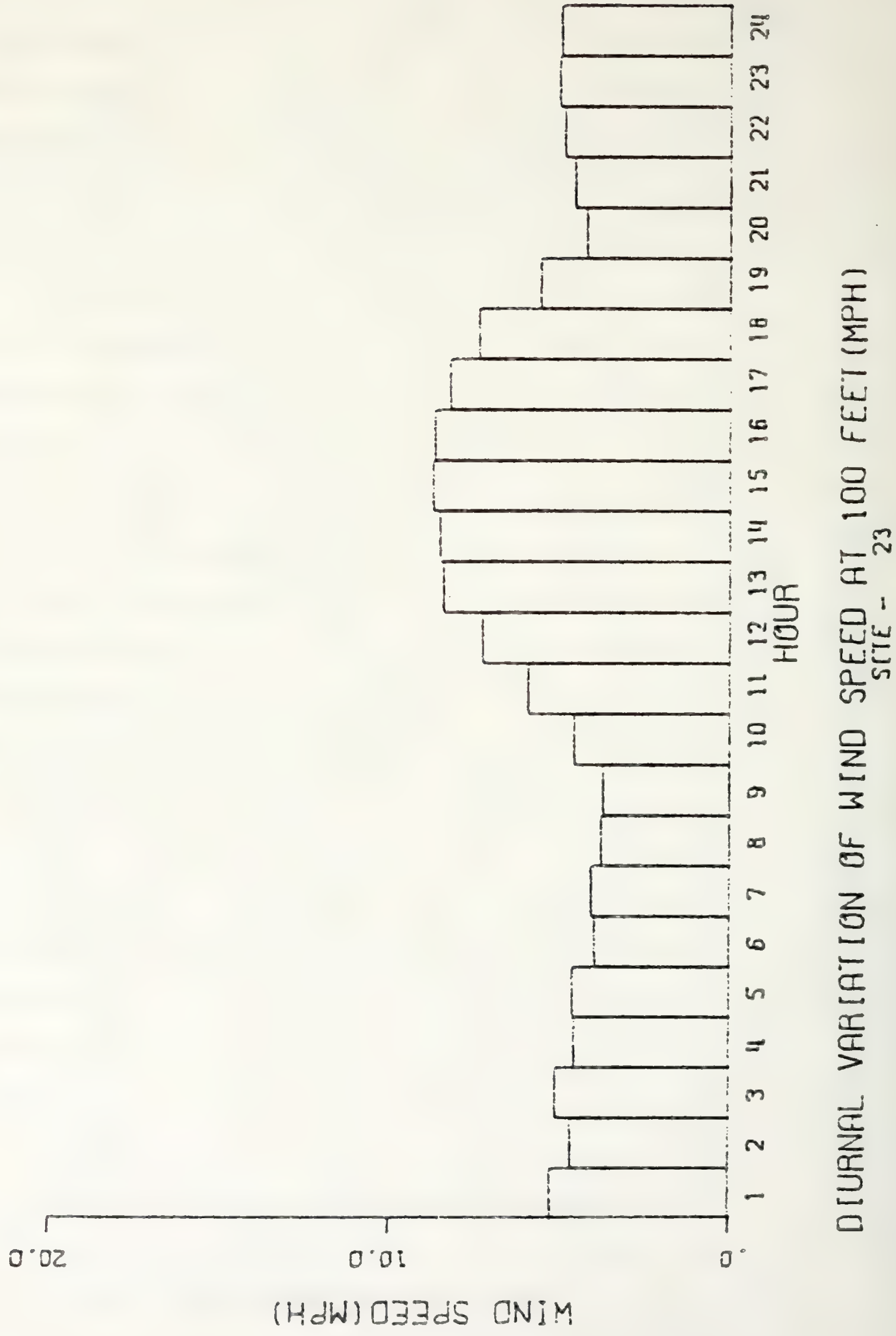
HOURLY TOTAL PRECIPITATION (HUNDREDTHS OF INCHES)
SITE - 23



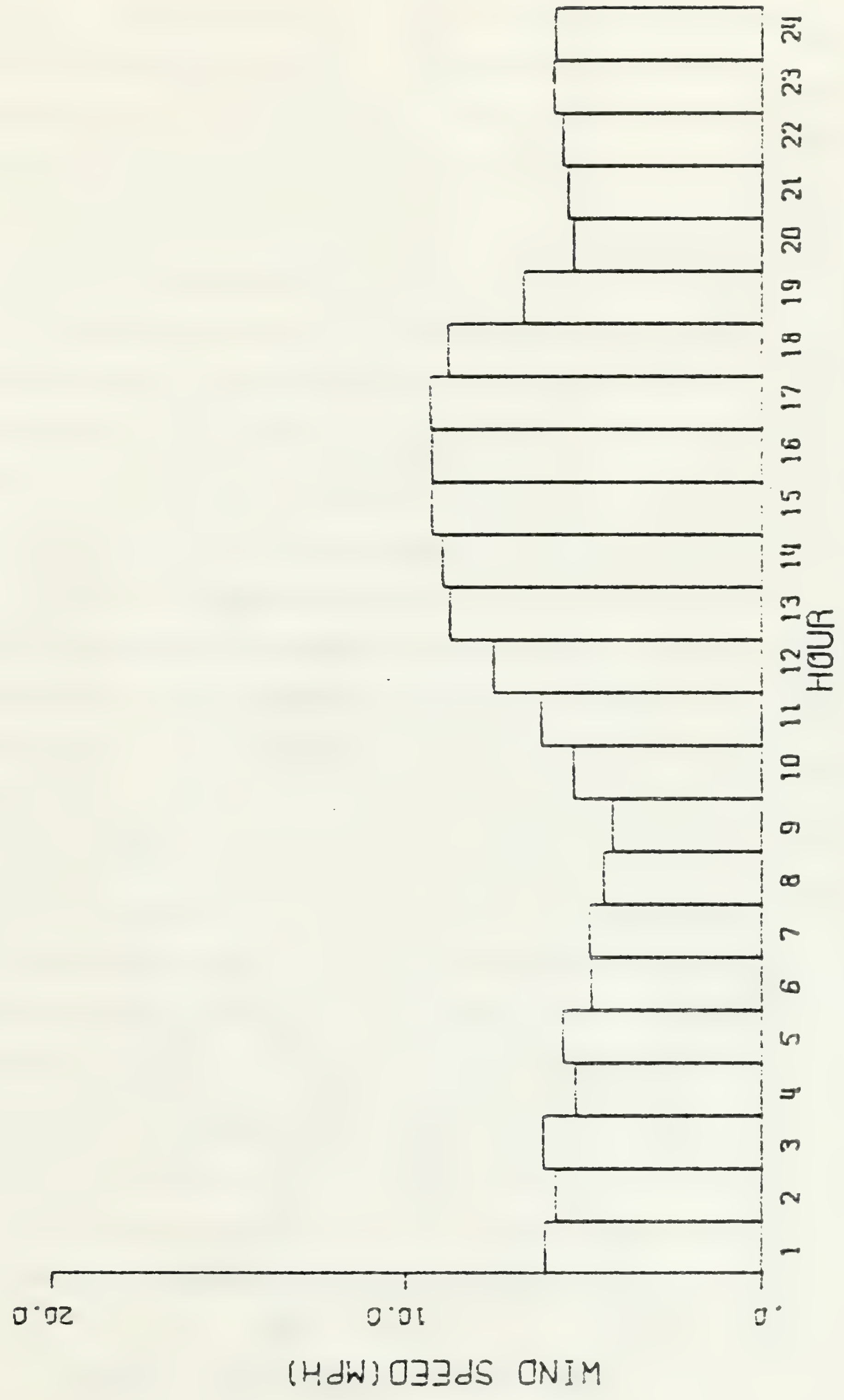
DIURNAL VARIATION OF WIND SPEED AT 8 FEET (MPH)
SITE - 23



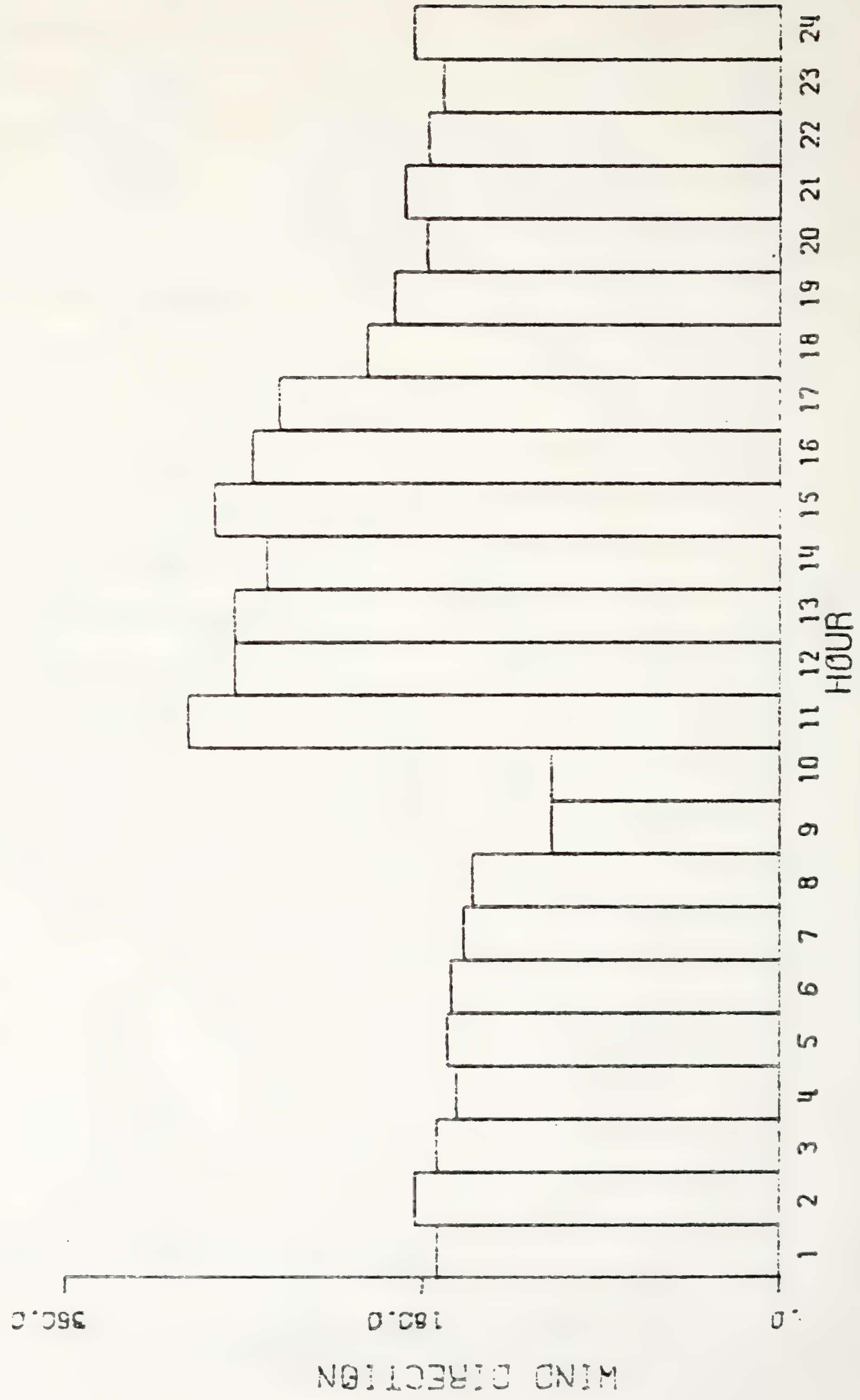
DIURNAL VARIATION OF WIND SPEED AT 30 FEET (MPH)
SITE - 23



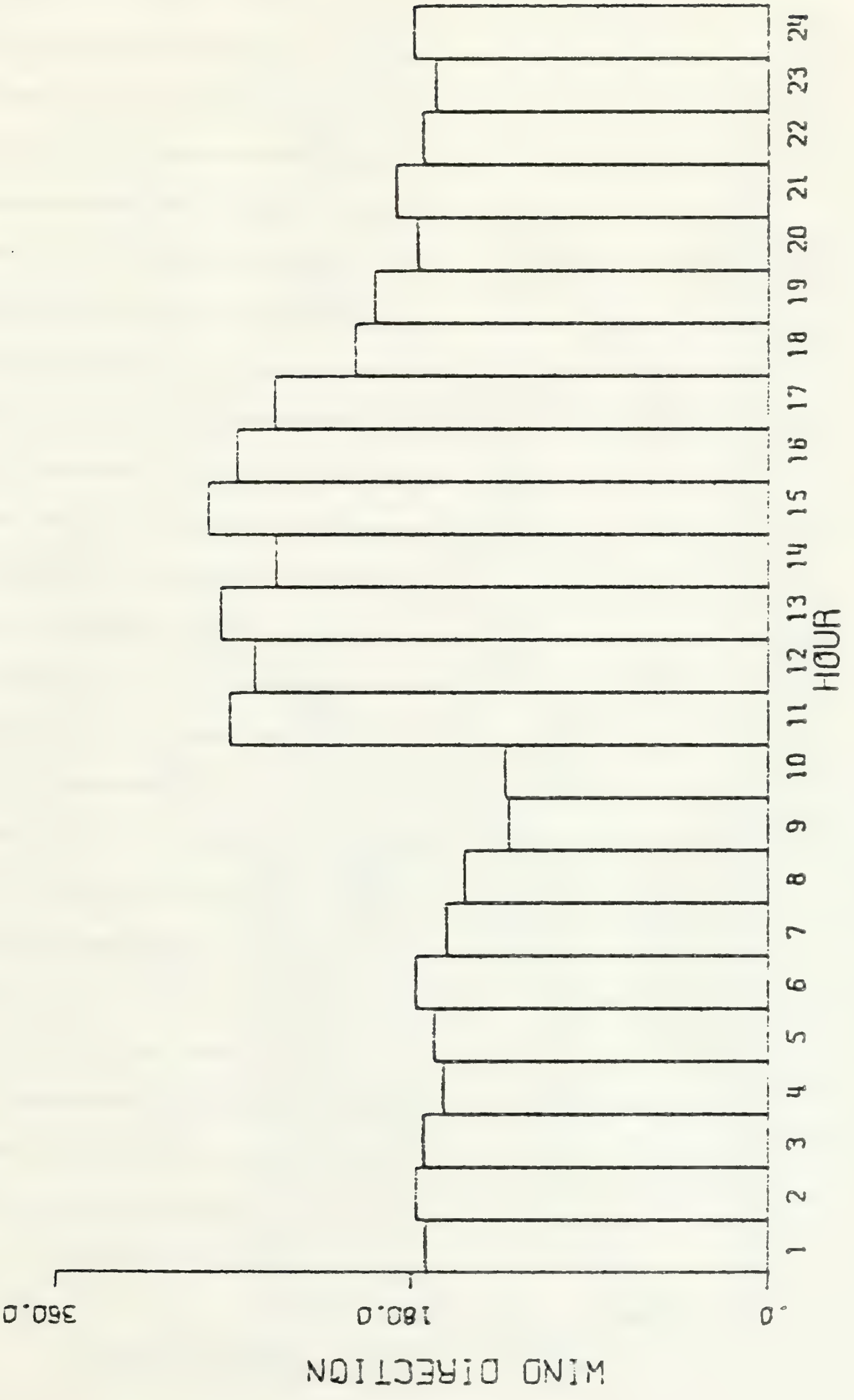
DIURNAL VARIATION OF WIND SPEED AT 100 FEET (MPH)
SITE - 23



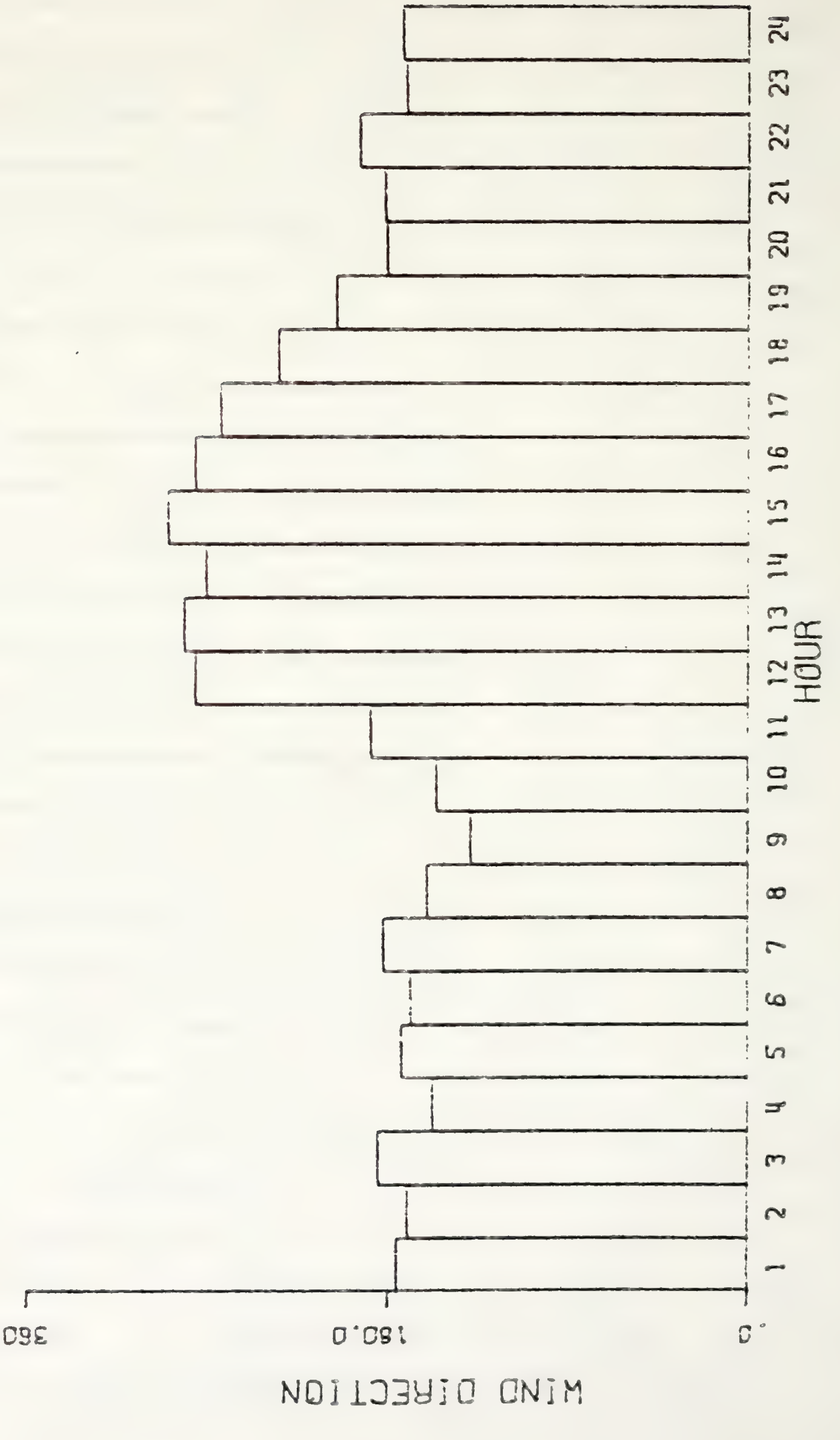
DIURNAL VARIATION OF WIND SPEED AT 200 FEET(MPH)
SITE - 23



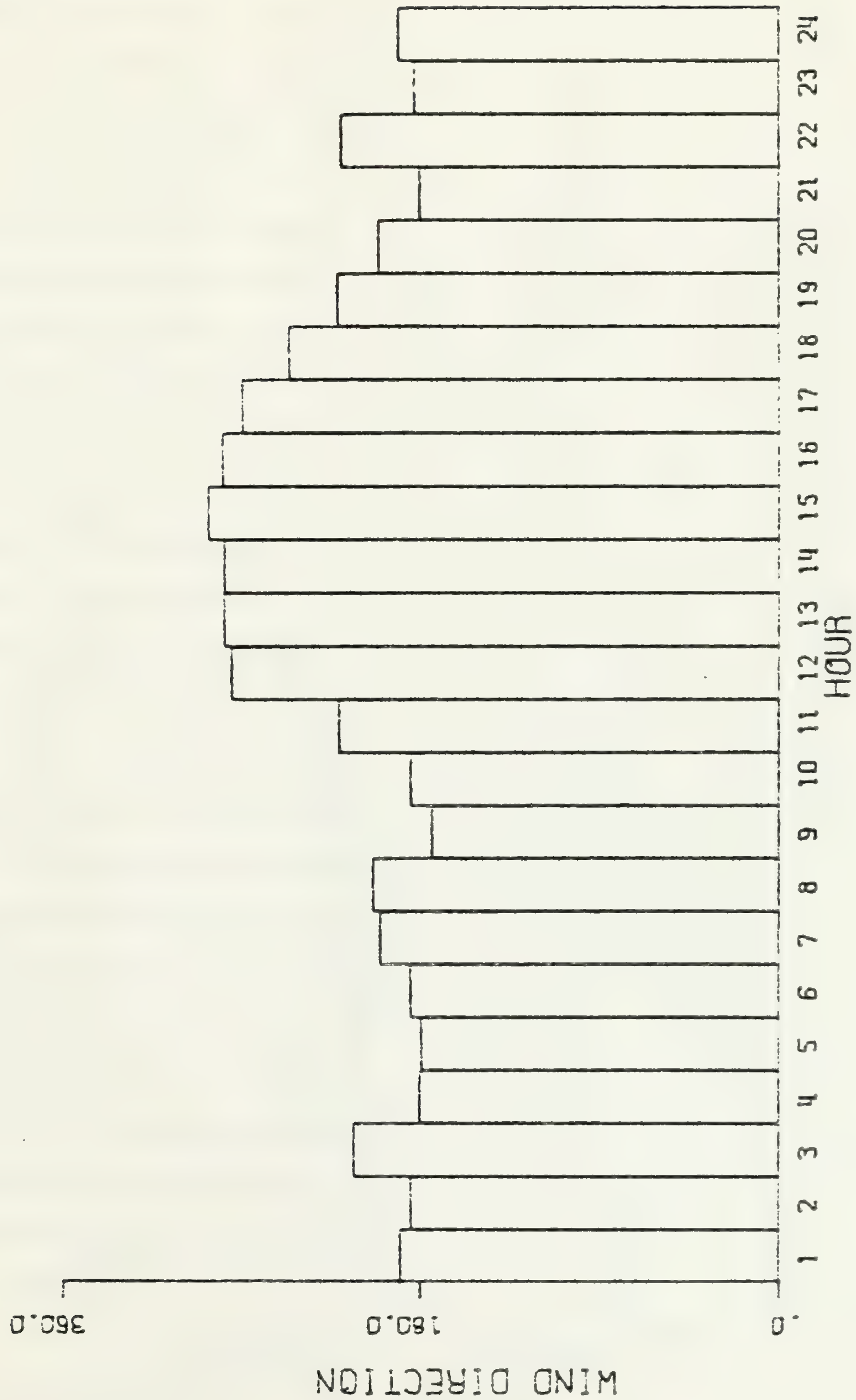
DIURNAL VARIATION OF WIND DIRECTION AT 8 FEET
SITE - 23



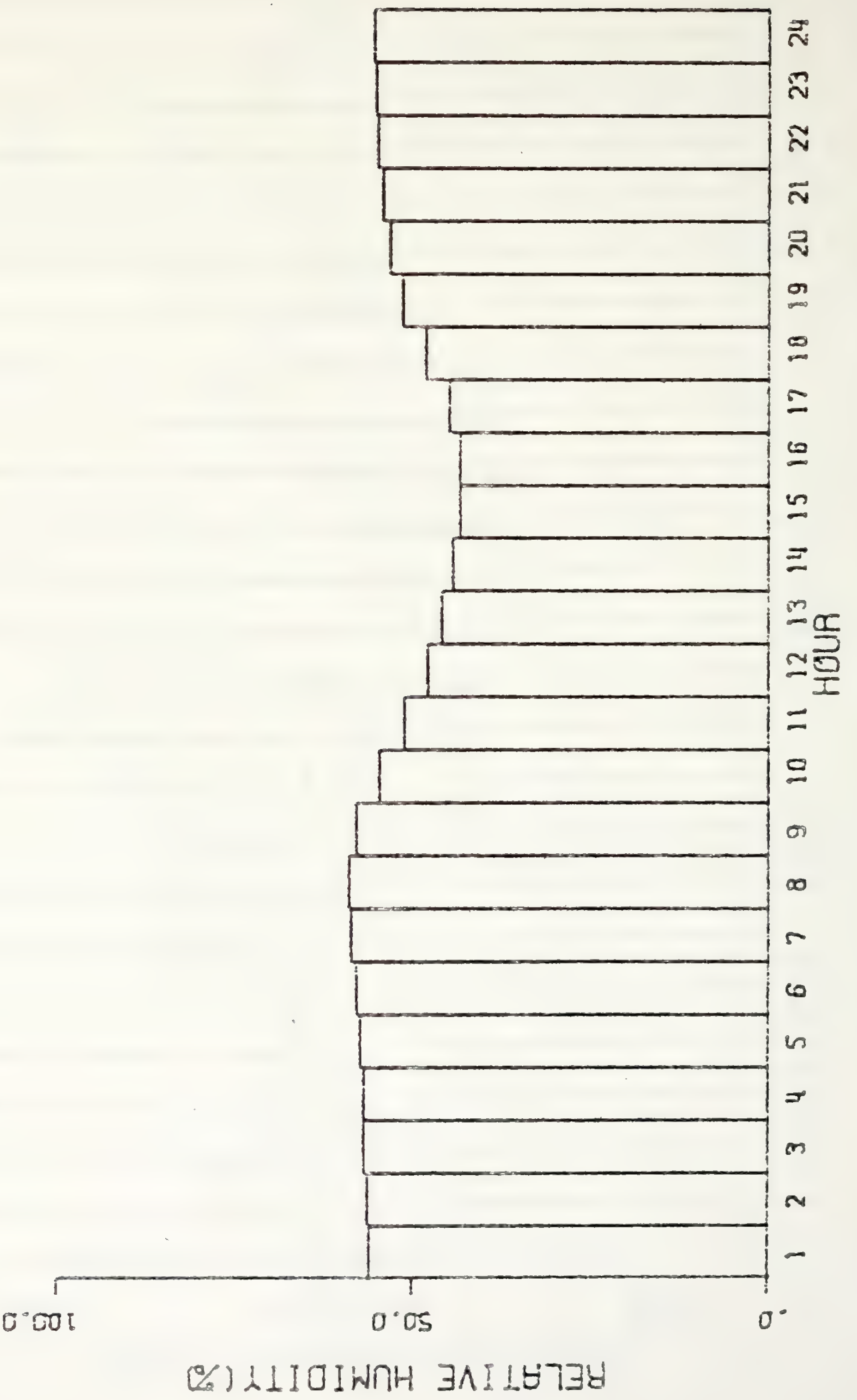
DIURNAL VARIATION OF WIND DIRECTION AT 30 FEET
SITE - 23



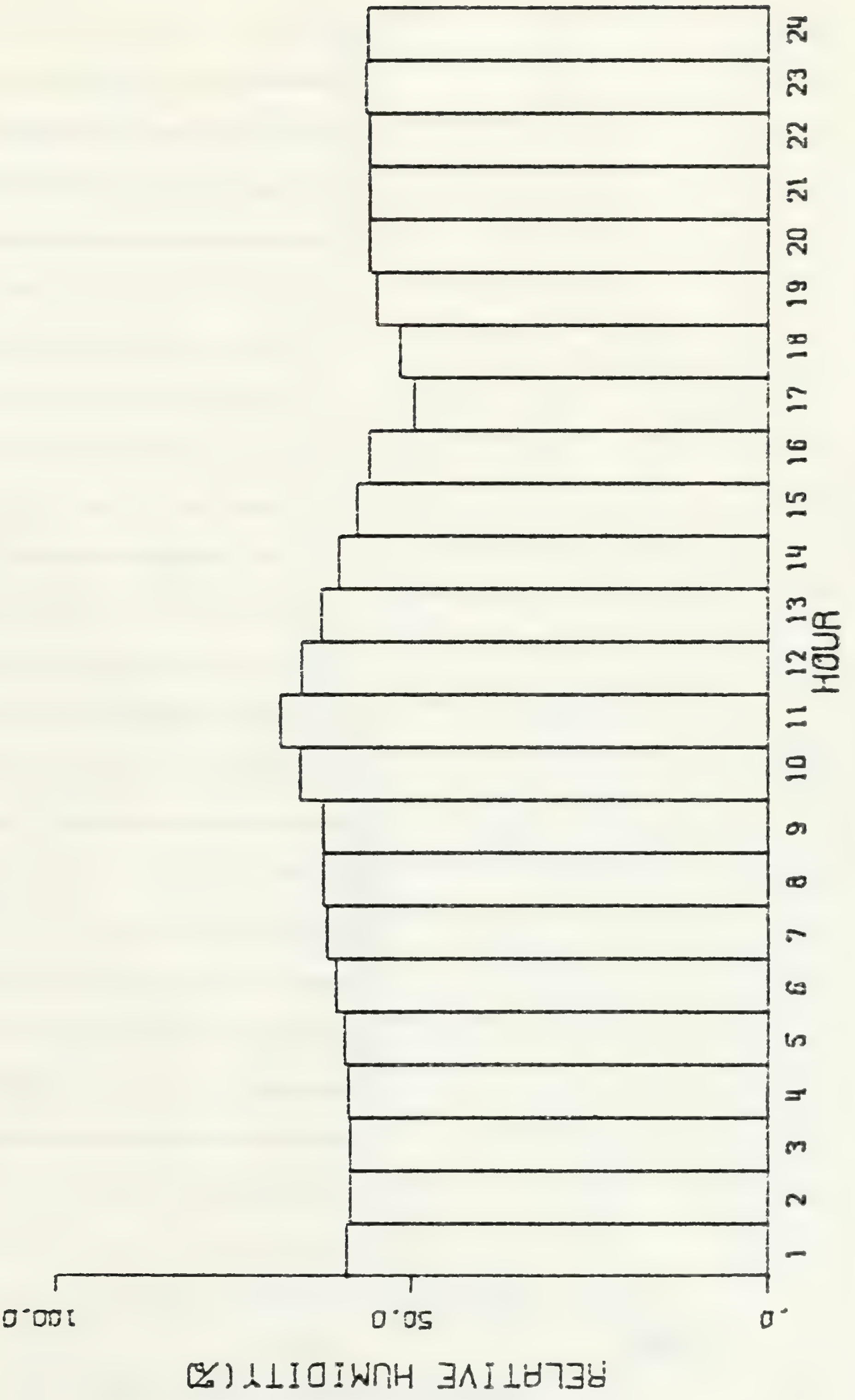
DIURNAL VARIATION OF WIND DIRECTION AT 100 FEET
SITE - 23



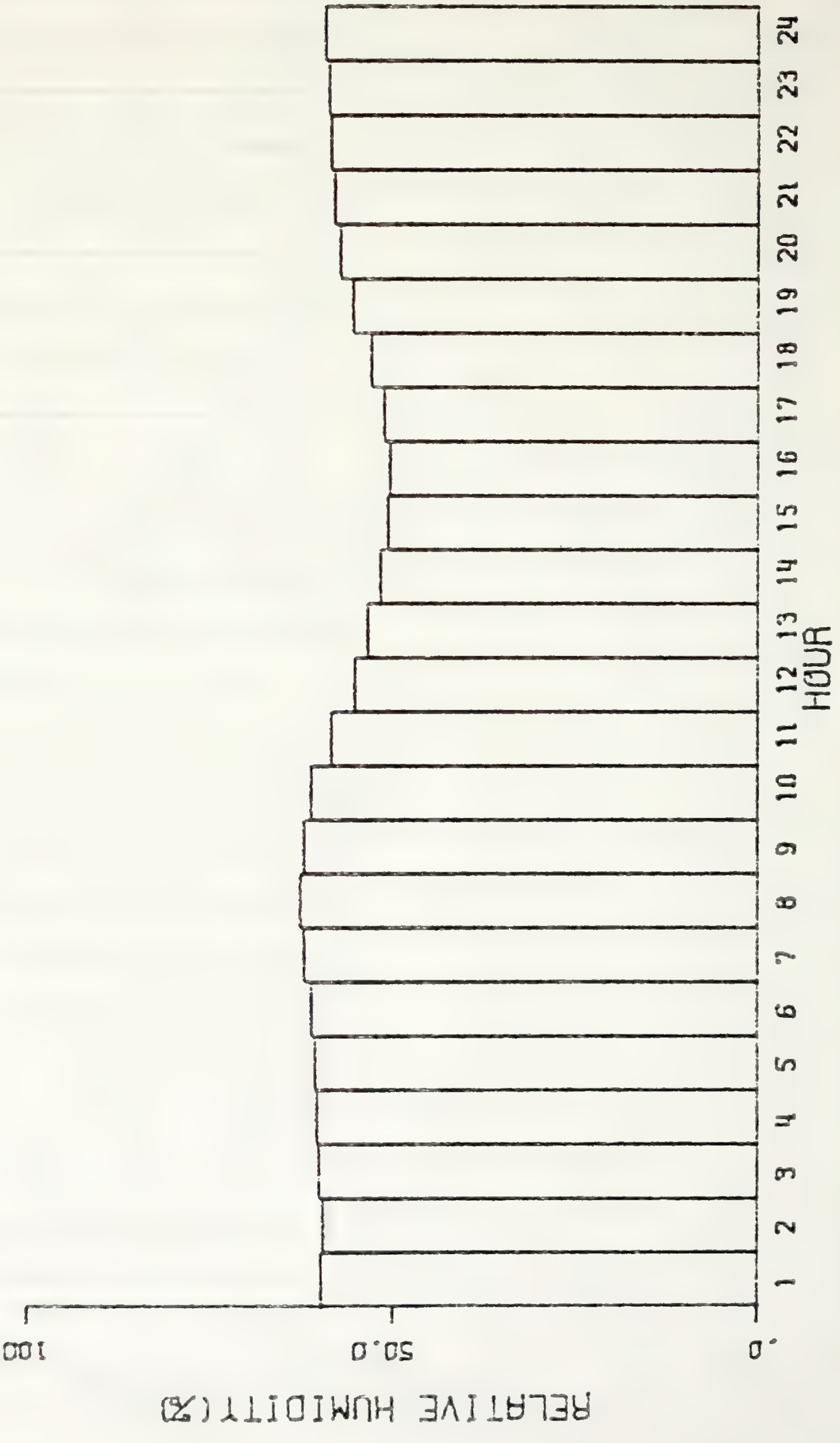
DIURNAL VARIATION OF WIND DIRECTION AT 200 FEET
SITE - 23



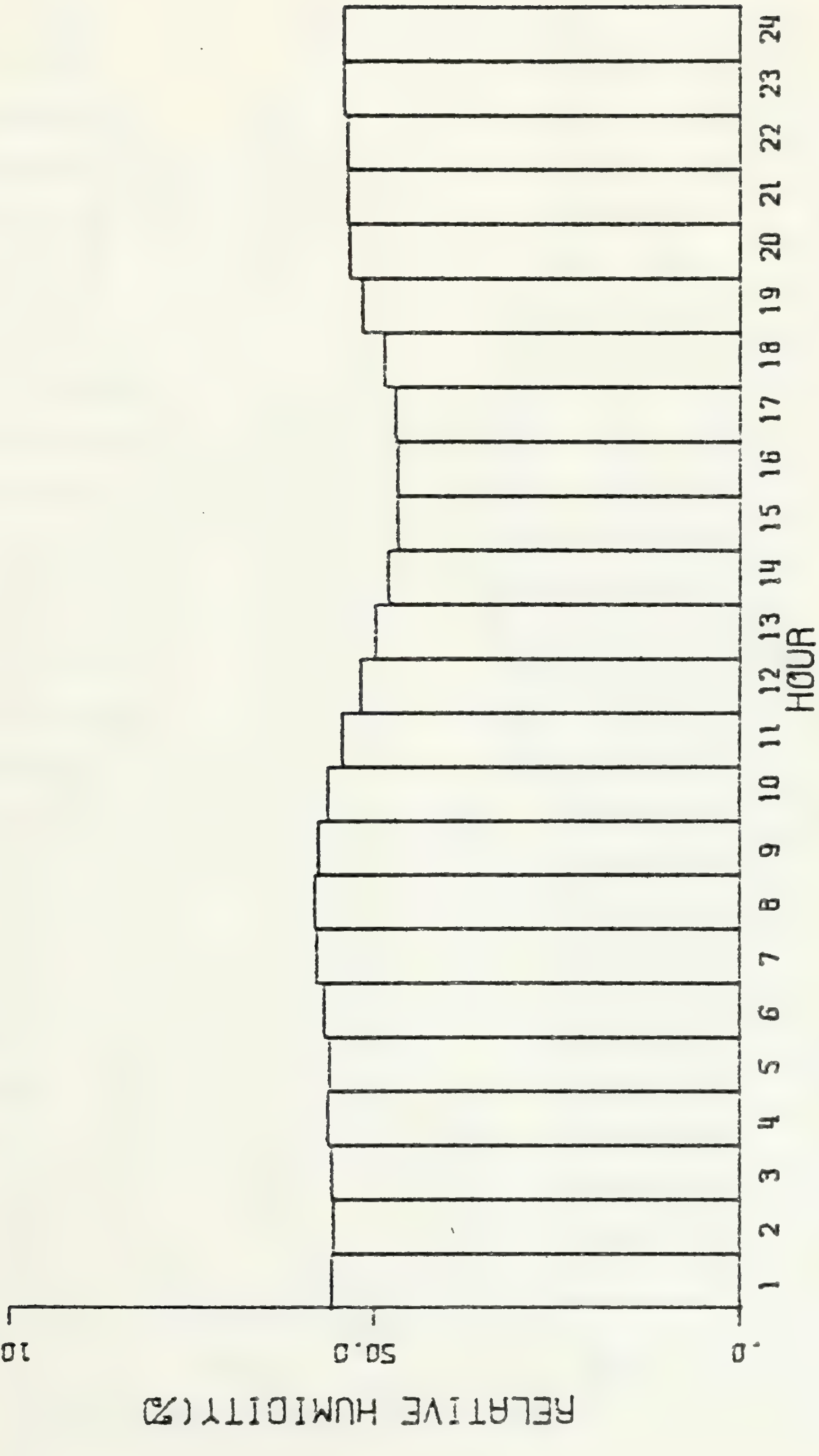
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 8 FEET
SITE - 23



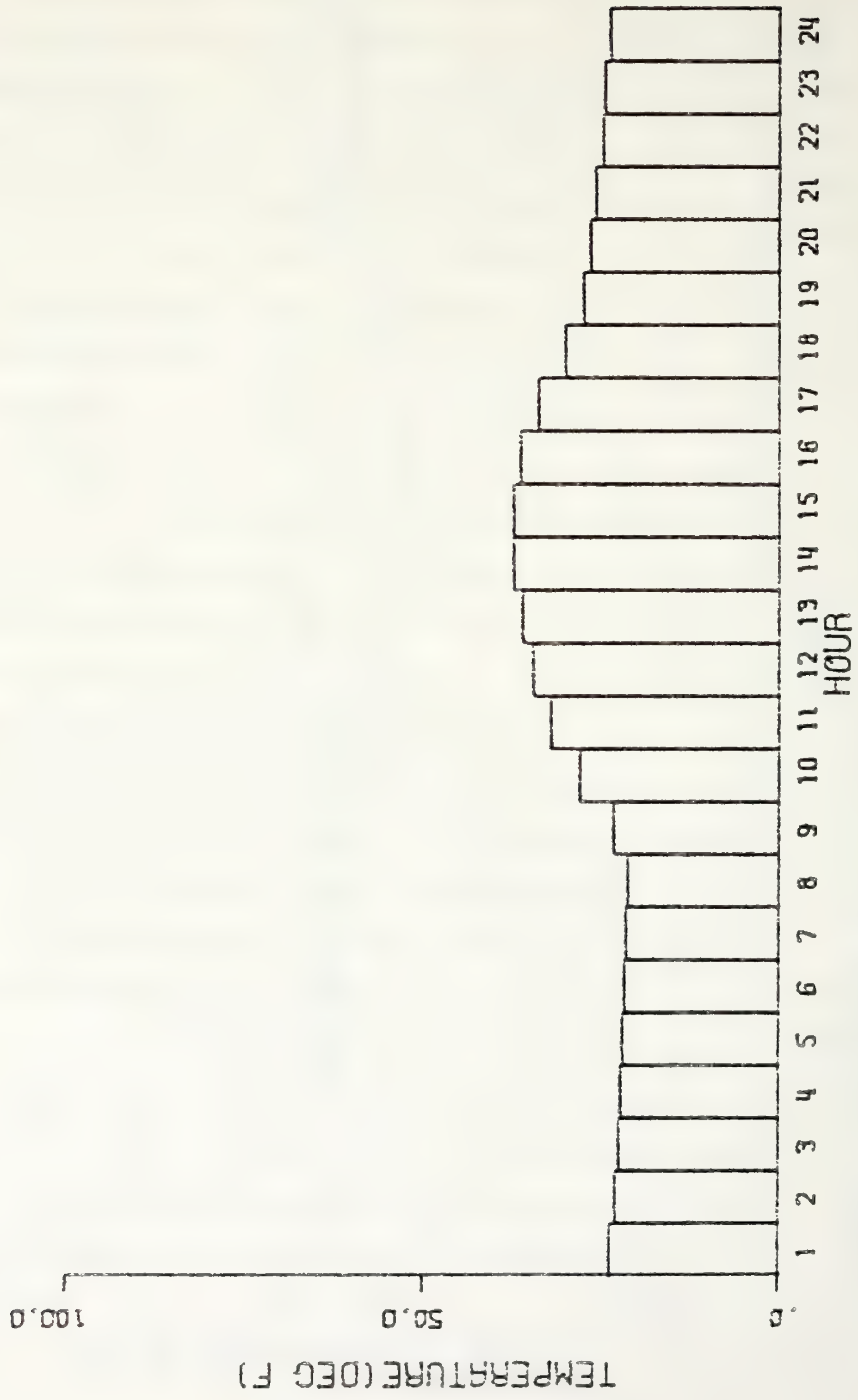
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 30 FEET
SITE - 23



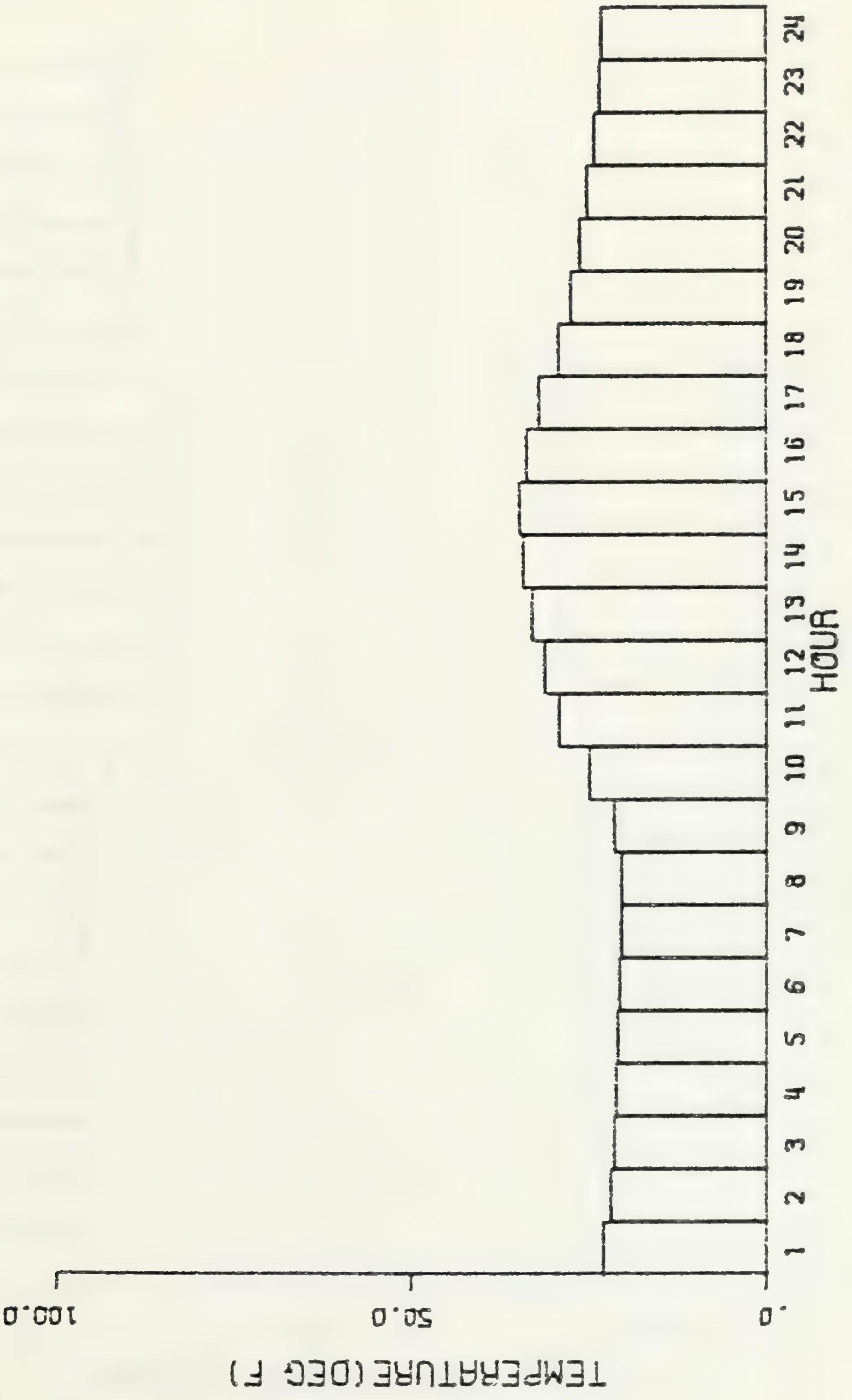
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 100 FEET
SITE - 23



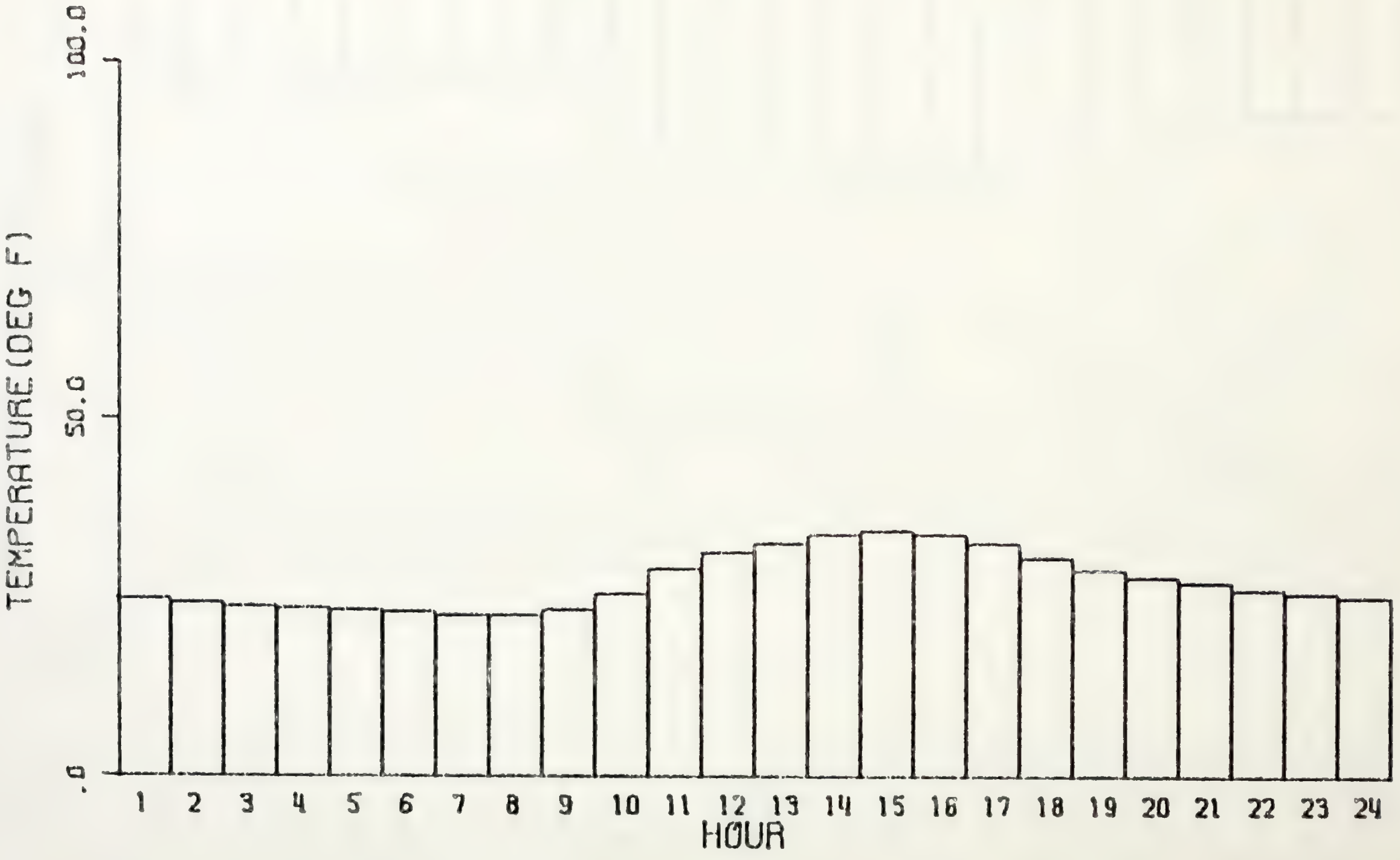
DIURNAL VARAITON OF RELATIVE HUMIDITY AT 200 FEET
SITE - 23



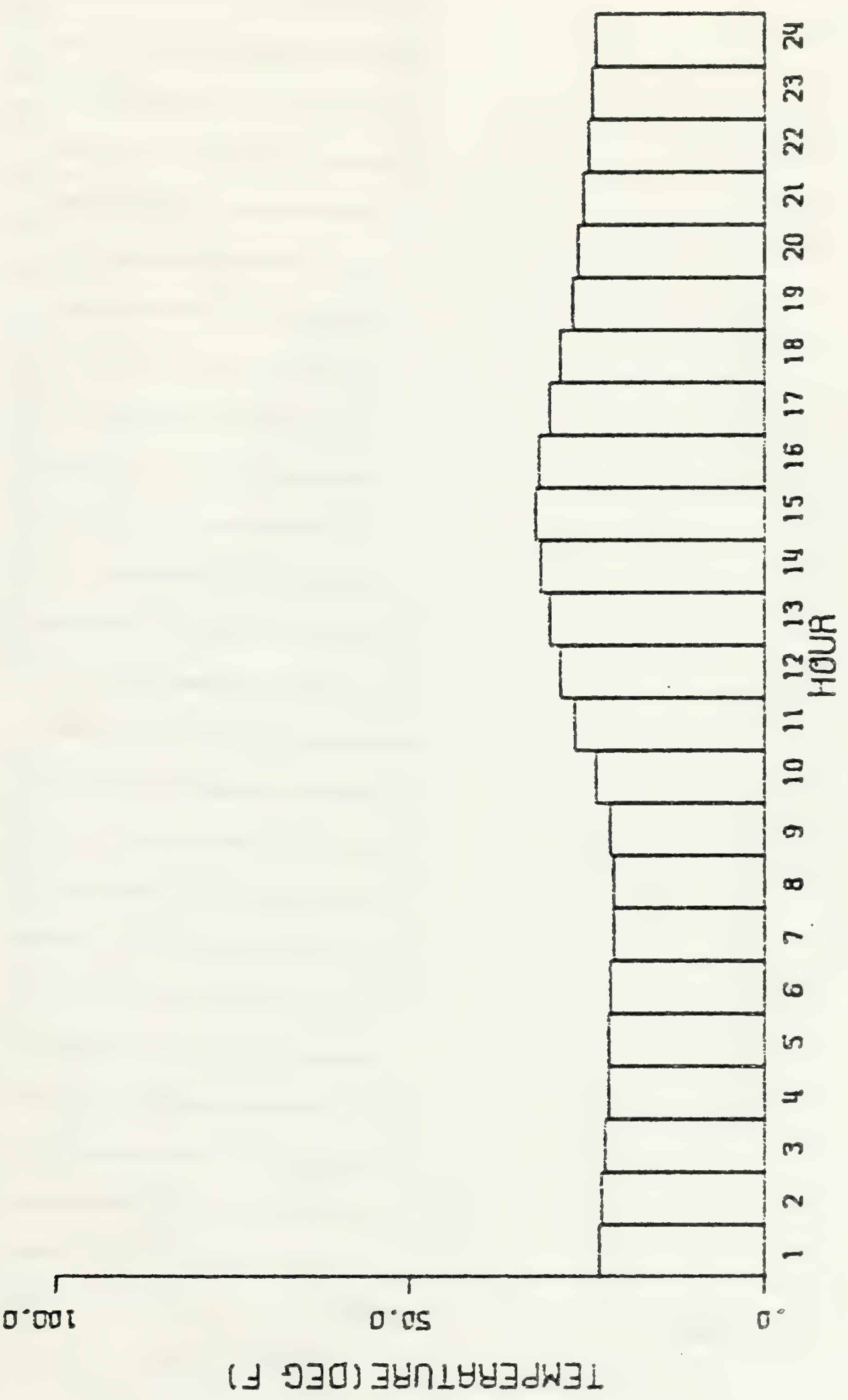
DIURNAL VARIATION OF TEMPERATURE AT 8 FEET(DEG F)
SITE - 23



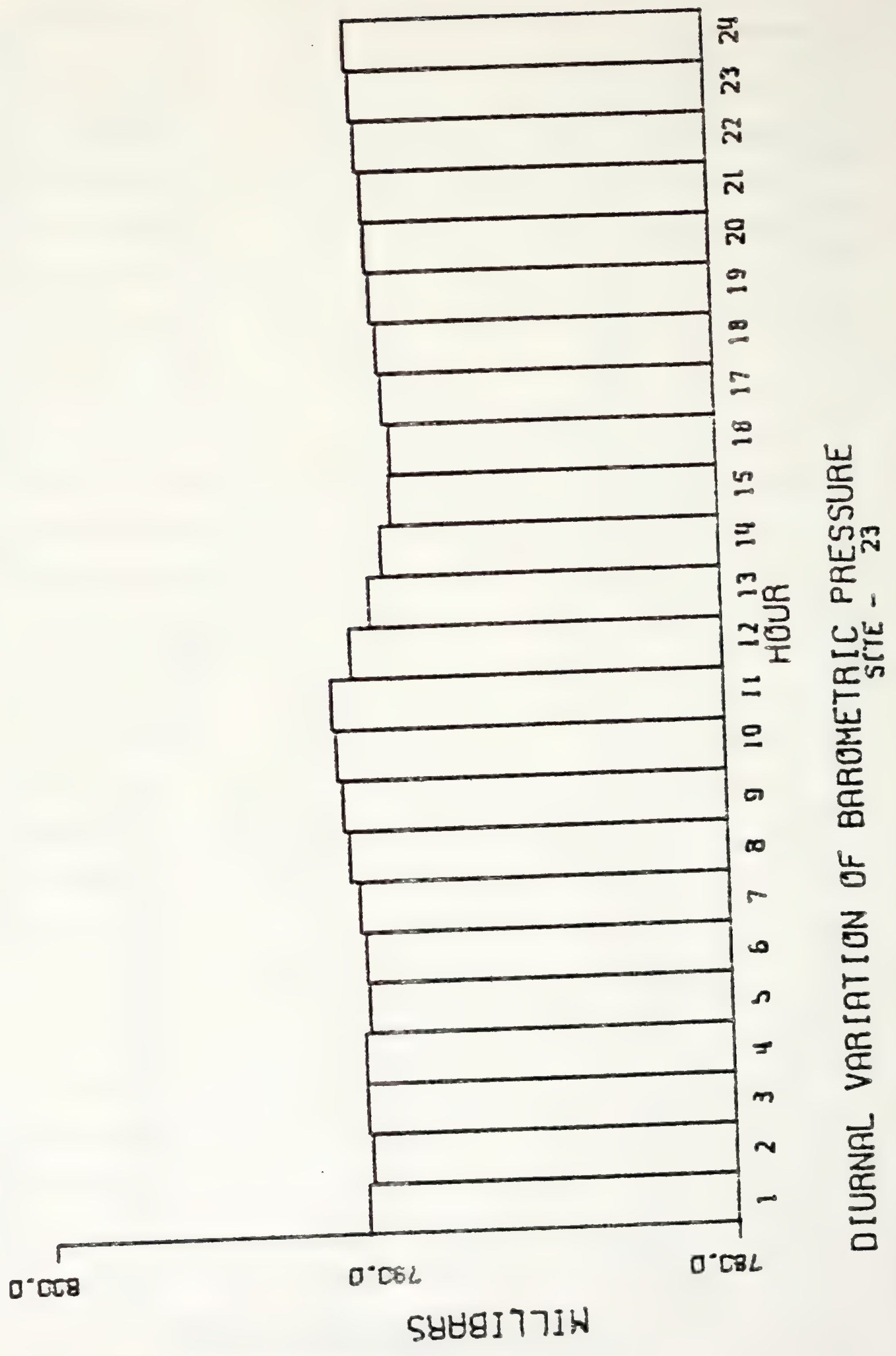
DIURNAL VARIATION OF TEMPERATURE AT 30 FEET (DEG F)
SITE - 23



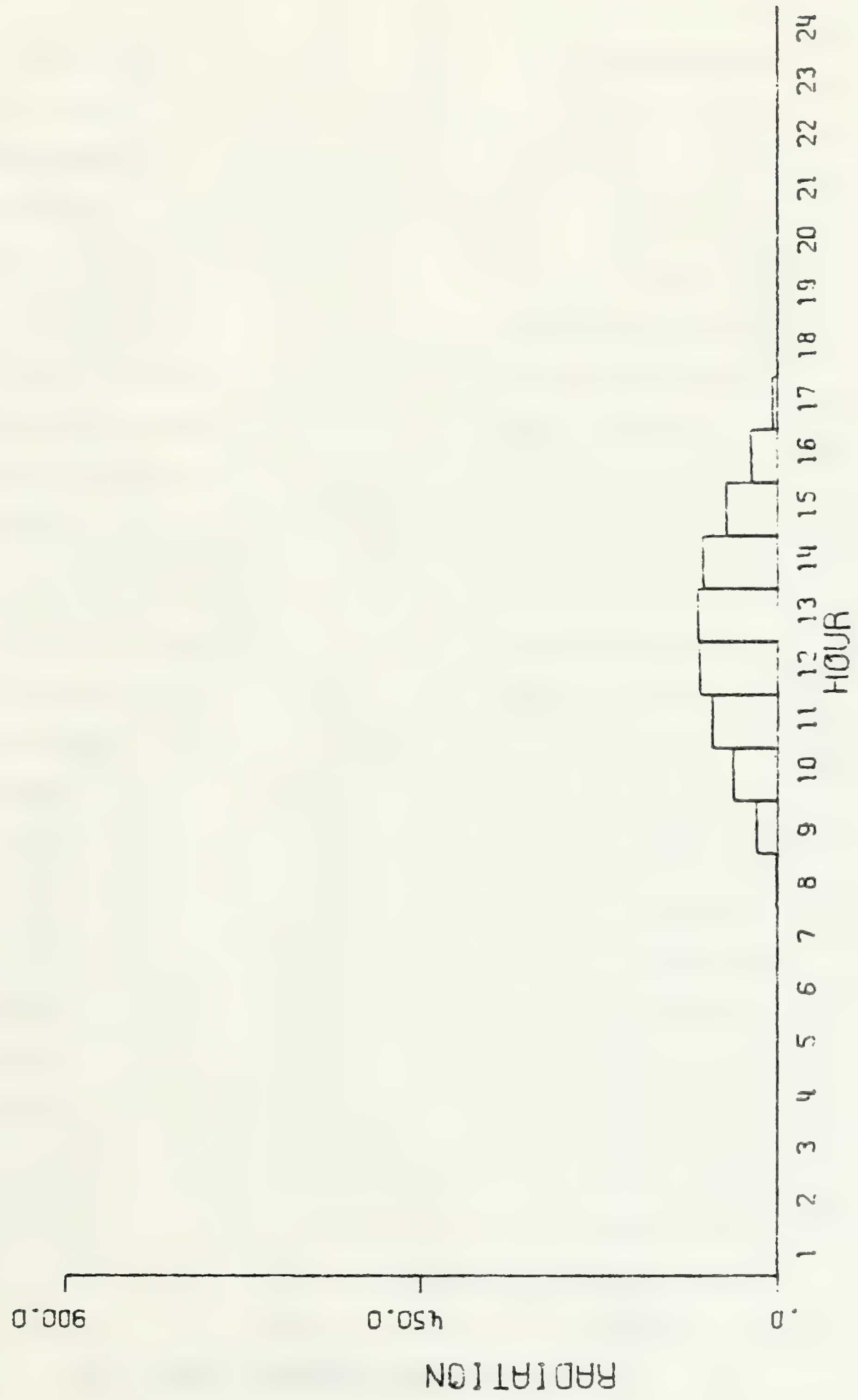
DIURNAL VARIATION OF TEMPERATURE AT 100 FEET(DEG F)
SITE - 23



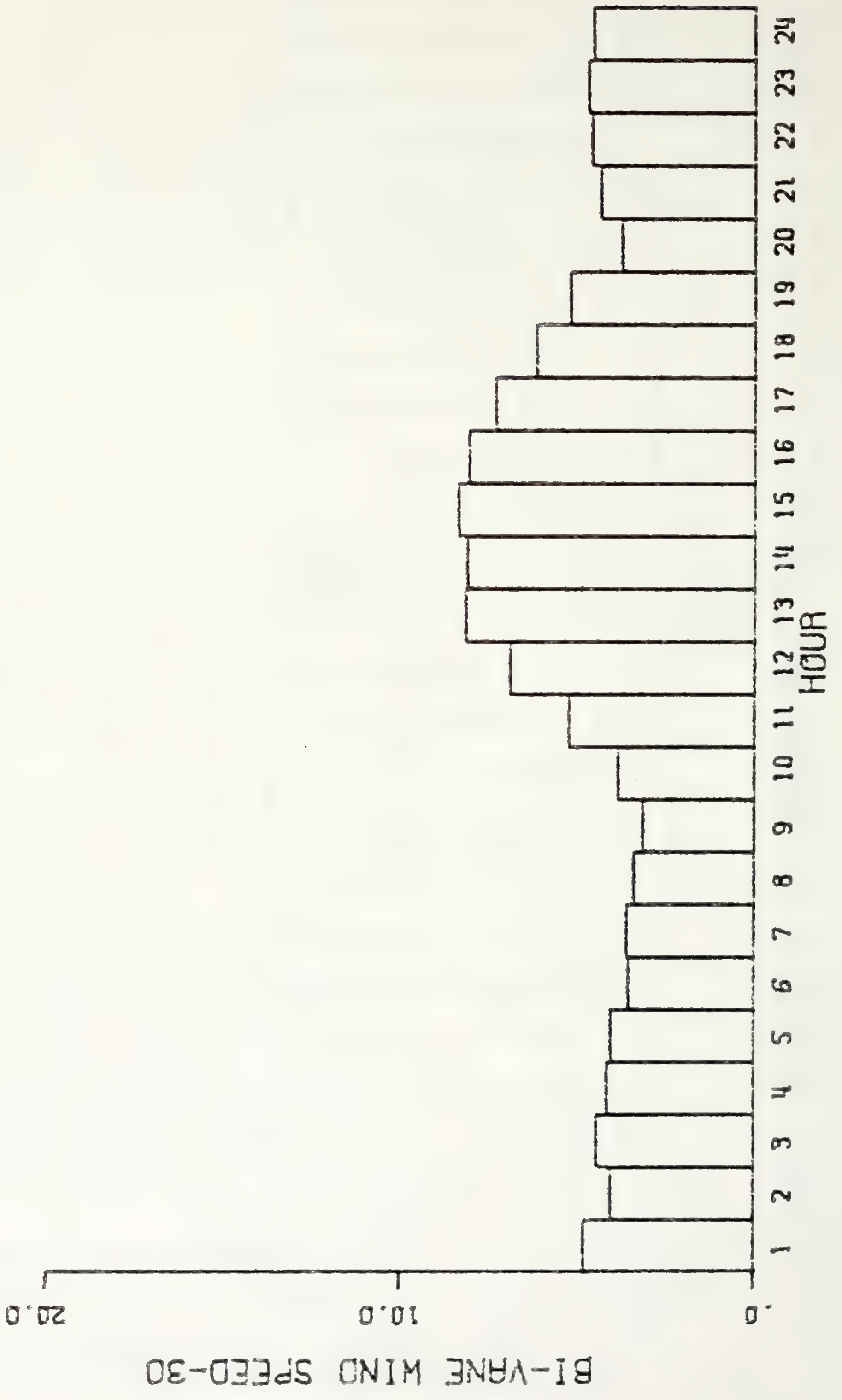
DIURNAL VARIATION OF TEMPERATURE AT 200 FEET (DEG F)
SITE - 23



DIURNAL VARIATION OF BAROMETRIC PRESSURE
SITE - 23



HOURLY TOTAL SOLAR RADIATION (LANGLEY)
SITE - 23



DIURNAL VARIATION OF BI-VANE WIND SPEED AT 30 FEET
SITE - 23

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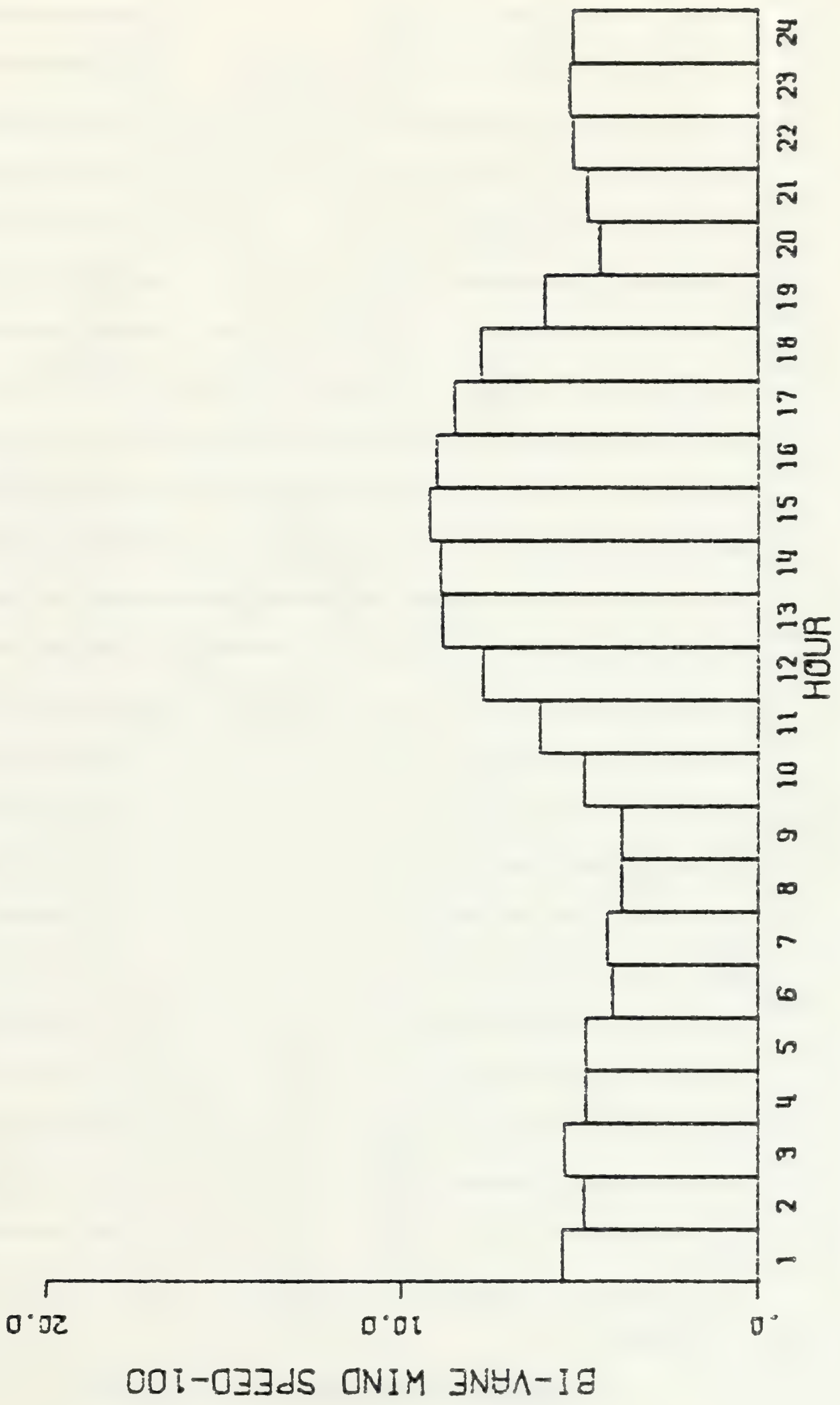
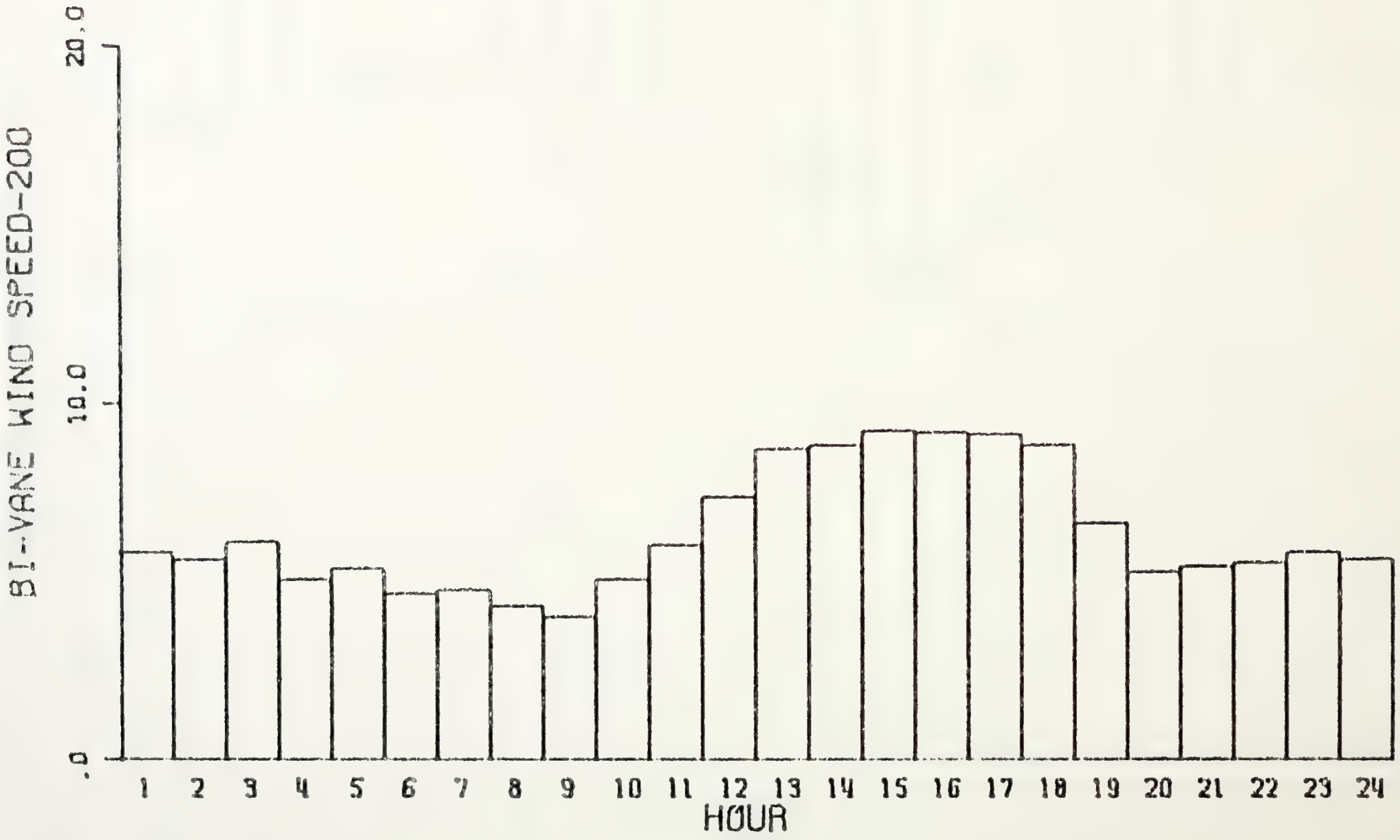
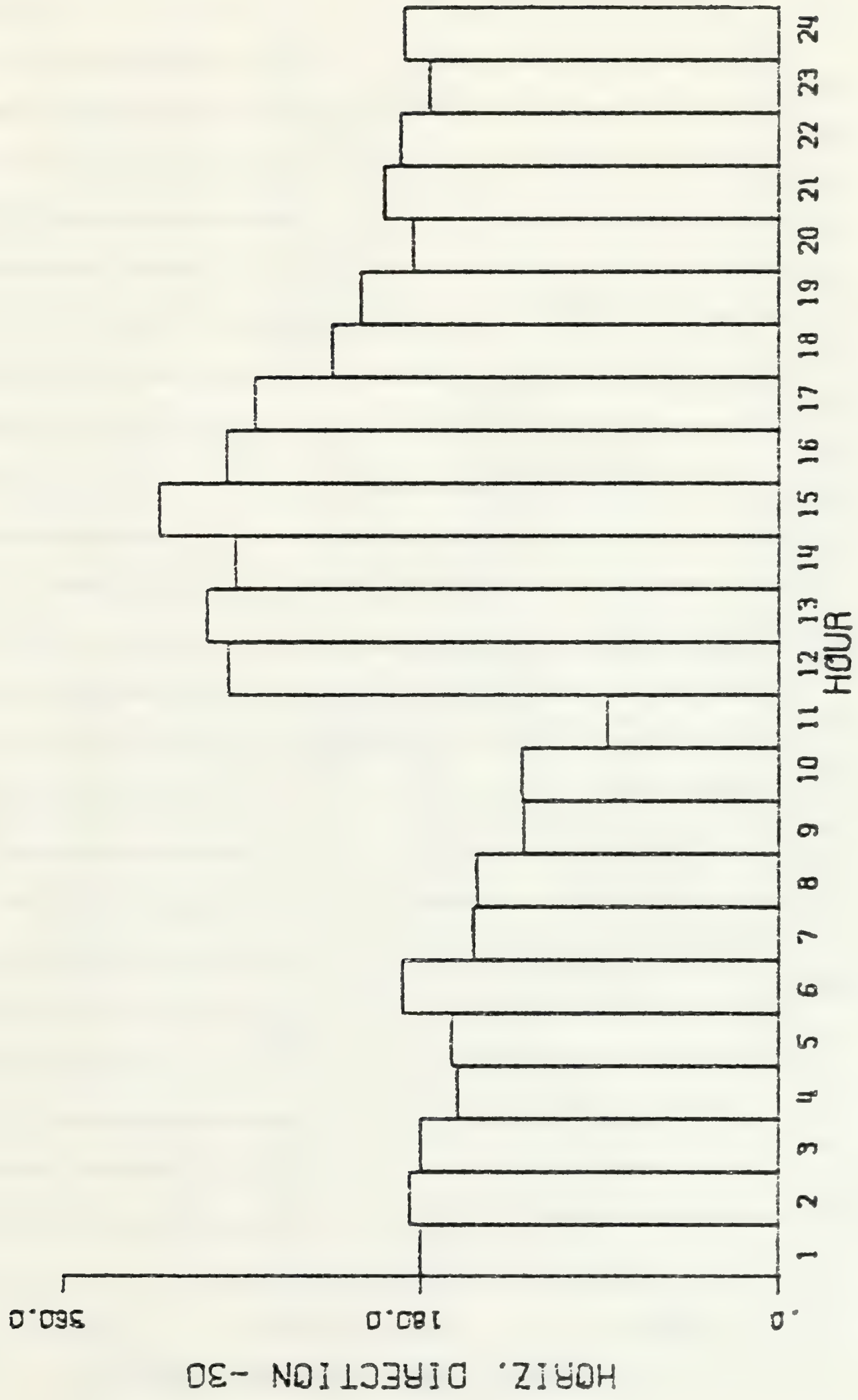
CORPORATION



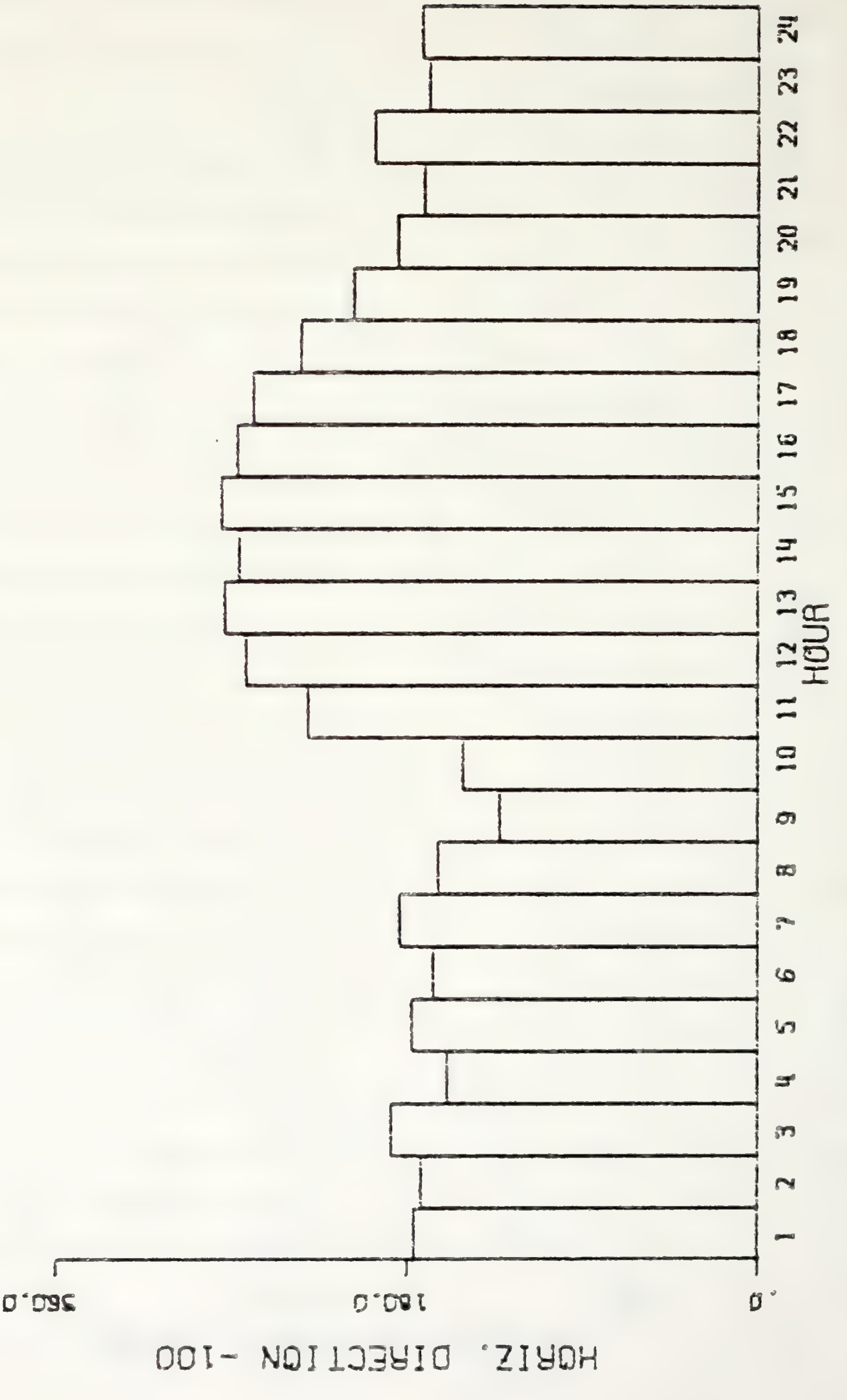
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 100 FEET
SITE - 23



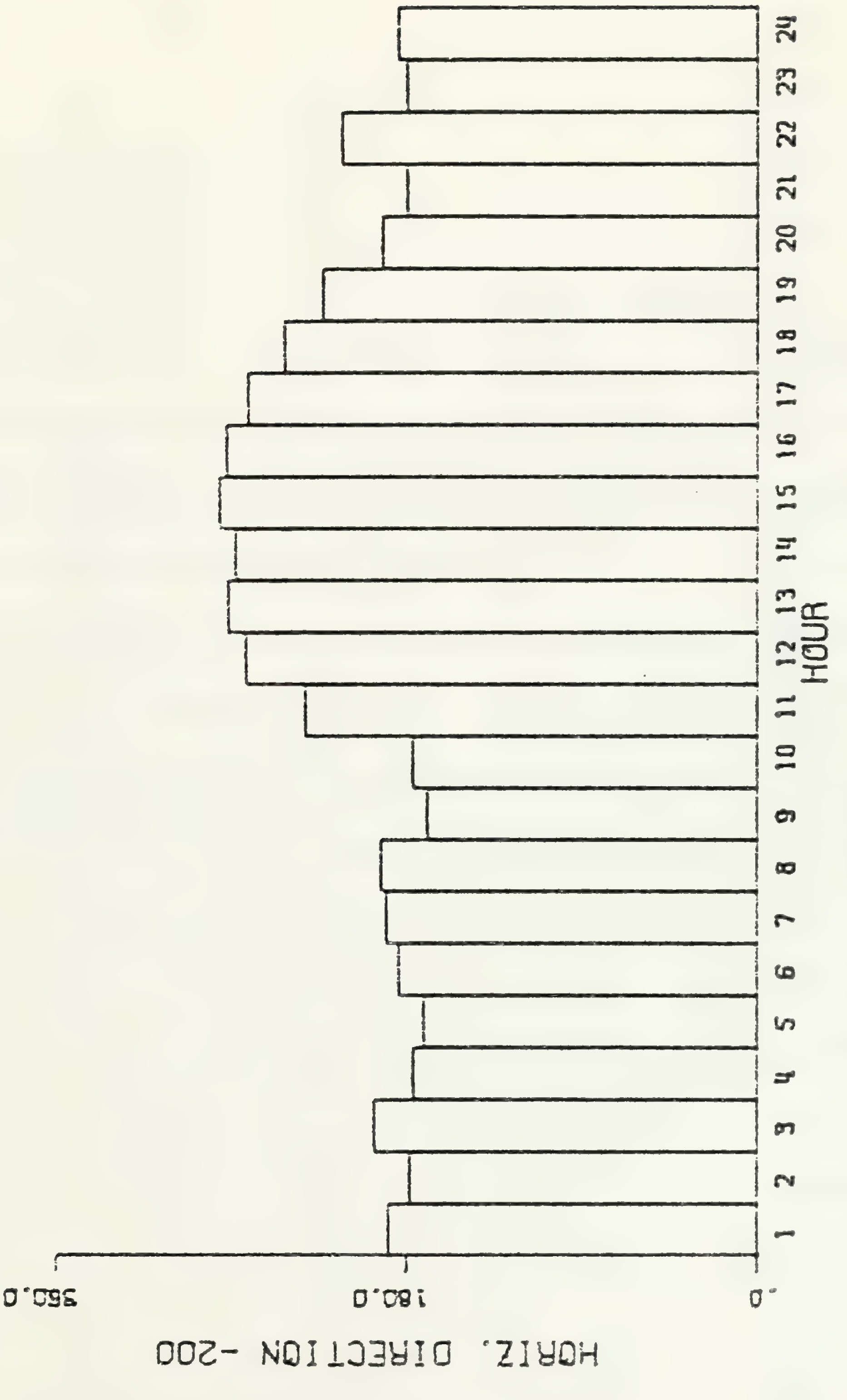
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 200 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 30 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 100 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 200 FEET
SITE - 23

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                 C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING PYRANOMETER RECORDING
                           PERIOD(12/ 1/76 TO 12/31/76)

                                             HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24


12/ 1                                  C   C   C   C   C   B   B   B   C   C
12/ 2                                  C   C   B   C   C   C   C   C   D   D
12/ 3                                  C   C   C   C   C   C   C   B   C   C
12/ 4                                  C   C   C   B   B   D   D   D   D
12/ 5                                      C   C   D   D   D   D   D   D   D
12/ 6                                      C   C   C   C   C   C   C   C   D
12/ 7                                  C   C   C   C   B   C   C   D   D   D
12/ 8                                  C   C   C   D   D   D   D   D   D   D
12/ 9                                  C   D   D   D   D   D   D   D   D   D
12/10                                      C   C   D   B   B   C   C   D   C
12/11                                  C   C   C   C   C   B   B   C   C   C
12/12                                  C   C   C   C   B   C   B   B   C   D
12/13                                  C   C   C   C   D   C   D   C   D   D
12/14                                      C   C   C   C   B   B   B   C   C
12/15                                      C   C   B   C   C   C   C   C   D
12/16                                      C   C   B   B   B   B   C   C   C
12/17                                      C   C   C   B   B   B   C   C   C
12/18                                      C   C   C   C   C   C   D   D   C
12/19                                      C   C   C   C   C   C   C   D   D
12/20                                  C   C   C   C   B   B   C   B   C   C
12/21                                      C   C   C   C   C   C   B   D   D
12/22                                  C   C   C   B   B   C   C   D   C   C
12/23                                      C   C   D   D   D   C   C   D   C
12/24                                      D   C   D   D   D   D   D   D   D
12/25                                  C   C   C   C   C   B   C   C   D   D
12/26                                      C   C   C   C   C   C   C   D   D
12/27                                      D   D   C   C   D   D   D   D   D
12/28                                      C   C   C   C   B   C       D   D
12/29                                      C   C   B   B   C   C   D   D   D
12/30                                      C   D   D   C   C   C   C   D   D
12/31                                      C   D   D   D   D   D   D   D   D

* NON-ZERO PYRANOMETER READING BUT STABILITY CLASS UNCERTAIN SINCE NIGHTTIME NET RADIATION INDEX IS REQUIRED
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C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
PERIOD(12/ 1/76 TO 12/31/76)

	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
12/ 1	D	D	D	E	E	E	F	F	F	A														
12/ 2																								
12/ 3																								
12/ 4																								
12/ 5																								
12/ 6																								
12/ 7																								
12/ 8																								
12/ 9																								
12/10																								
12/11																								
12/12																								
12/13																								
12/14																								
12/15																								
12/16					E					E														
12/17																								
12/18																								
12/19																								
12/20																								
12/21																								
12/22																								
12/23																								
12/24																								
12/25																								
12/26																								
12/27															D	C	E	E	E	E	F	E	F	F
12/28	F	F	F	F	F	F	F	F	F	E	A	A	A	B		B	D	F	F	F	F	F	F	F
12/29	F	F	F	E	F	F	F	F	F	C	B	A	B	B	B	B	D	D	F	F	F	F	F	F
12/30	F	F	F	F	E	E	E	E	E	C	B	B	B	B	B	B	C	D	E	E	E	E	E	F
12/31	F	F	F	F	F	F	E	D	D	C	B	B	D	D	D	D	C	D	D	D	D	D	E	E

```
                         C-b SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                  PERIOD(12/ 1/76 TO 12/31/76)

                                    HOURLY WIND AND DIRECTION
                                       A STABILITY CLASS

                                               HOUR
        1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24


12/ 1                                        0
                                           ENE

12/ 2

12/ 3

12/ 4

12/ 5

12/ 6

12/ 7

12/ 8

12/ 9

12/10

12/11

12/12

12/13

12/14

12/15

12/16
```

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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                  STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                            PERIOD(12/ 1/76 TO 12/31/76)

                             HOURLY WIND AND DIRECTION
                                A STABILITY CLASS

12/17

12/18

12/19

12/20

12/21

12/22

12/23

12/24

12/25

12/26

12/27

                                         2   2   3
12/28                                   SE WSW NNE
                                             3
12/29                                       SW

12/30

12/31
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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                  STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                             PERIOD(12/ 1/76 TO 12/31/76)

                              HOURLY WIND AND DIRECTION
                                 B STABILITY CLASS

                                        HOUR
        1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24


12/ 1

12/ 2

12/ 3

12/ 4

12/ 5

12/ 6

12/ 7

12/ 8

12/ 9

12/10

12/11

12/12

12/13

12/14

12/15

12/16
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CORPORATION

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                      C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                   STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                              PERIOD(12/ 1/76 TO 12/31/76)

                                HOURLY WIND AND DIRECTION
                                    B STABILITY CLASS

12/17

12/18

12/19

12/20

12/21

12/22

12/23

12/24

12/25

12/26

12/27

12/28                                                        5       10
                                                           SSW     SSW
12/29                                            4       4   6   8  11
                                                 S     SSW   S SSW SSW
12/30                                            8   8   7   8   9   7
                                               SSW WNW WNW  NW NNW  NW
12/31                                            8  11
                                               SSW SSW
```

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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                 STABILITY CLASS DETERMINAITON USING DT/DZ (LEVEL 1)
                            PERIOD(12/ 1/76 TO 12/31/76)

                              HOURLY WIND AND DIRECTION
                                 C STABILITY CLASS

                                          HOUR
        1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

12/ 1

12/ 2

12/ 3

12/ 4

12/ 5

12/ 6

12/ 7

12/ 8

12/ 9

12/10

12/11

12/12

12/13

12/14

12/15

12/16
```

```
                        C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                      STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                PERIOD(12/ 1/76 TO 12/31/76)

                                  HOURLY WIND AND DIRECTION
                                     C STABILITY CLASS

12/17

12/18

12/19

12/20

12/21

12/22

12/23

12/24

12/25

12/26
                                                         12
12/27                                                   NNW

12/28
                                      4
12/29                               ESE
                                      8                     7
12/30                               SSW                    NW
                                      6                    14
12/31                               SSW                    SW
```

```
                          C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                        STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                  PERIOD(12/ 1/76 TO 12/31/76)

                                     HOURLY WIND AND DIRECTION
                                        D STABILITY CLASS

                                               HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24


12/ 1    13   4   5
          N WNW WNW
12/ 2

12/ 3

12/ 4

12/ 5

12/ 6

12/ 7

12/ 8

12/ 9

12/10

12/11

12/12

12/13

12/14

12/15

12/16
```

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                 C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
             STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                       PERIOD(12/ 1/76 TO 12/31/76)

                         HOURLY WIND AND DIRECTION
                            D STABILITY CLASS

12/17
12/18
12/19
12/20
12/21
12/22
12/23
12/24
12/25
12/26
12/27                                                     13
                                                         NNW
12/28                                                                8
                                                                   SSW
12/29                                                               12   16
                                                                   SSW  SSW
12/30                                                                     5
                                                                        WNW
12/31                   8    3                  14   16   16   15         9   10    6    7    9
                      SSW    S                  SW   SW   SW   SW        SW  SSW  SSW  SSW  SSW
```

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                  C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                 STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                          PERIOD(12/ 1/76 TO 12/31/76)

                             HOURLY WIND AND DIRECTION
                                E STABILITY CLASS

                                     HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

12/ 1                  8   9   4
                     WNW WNW  NW
12/ 2

12/ 3

12/ 4

12/ 5

12/ 6

12/ 7

12/ 8

12/ 9

12/10

12/11

12/12

12/13

12/14

12/15

12/16                      0                   0
                           N                   N
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CORPORATION

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                C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
               STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                       PERIOD(12/ 1/76 TO 12/31/76)

                         HOURLY WIND AND DIRECTION
                            E STABILITY CLASS

12/17

12/18

12/19

12/20

12/21

12/22

12/23

12/24

12/25

12/26

12/27                                                                     9   6   2   5       6
                                                                        NNW   N SSW   N     WNW
12/28                                         1
                                             SE
12/29                 9
                    SSW
12/30                    12   6   8   6   2                                       2   0   1   1   0
                        SSW   S SSW SSW SSE                                      SW  NW WSW   W NNE
12/31                             5                                                               6  10
                                SSW                                                             SSW SSW
                         C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                       STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                PERIOD(12/ 1/76 TO 12/31/76)

                                  HOURLY WIND AND DIRECTION
                                     F STABILITY CLASS

                                            HOUR
         1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

12/ 1                                3   3   1
                                    SW SSW   S
12/ 2

12/ 3

12/ 4

12/ 5

12/ 6

12/ 7

12/ 8

12/ 9

12/10

12/11

12/12

12/13

12/14

12/15

12/16
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                         C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINATION USING DT/07 (LEVEL 1)
                                   PERIOD(12/ 1/76 TO 12/31/76)

                                        HOURLY WIND AND DIRECTION
                                           F STABILITY CLASS

12/17

12/18

12/19

12/20

12/21

12/22

12/23

12/24

12/25

12/26

                                                                                                            6         4    2
12/27                                                                                                      NW       WSW   SW
12/28       5    6    5    2    1    1    0    0    3                                         8    3    3    2    2    2    3
           SW   SW   SW   SW  WNW   SE  ESE    S  SSE                                       SSW    S  SSW  ESE   SE  ESE   SE
12/29       4    4    7         5    2    3    3    3                                              4    3    4    3    3    3
           SE    S    S         S    S    S  SSE   SE                                             SE   SE  SSE   SE  SSE  SSE
12/30       3    5    6    4                                                                                              0
          SSE    S    S  SSE                                                                                            ENE
12/31       3    1    1    1    1    4
          ESE    S    E  ENE  ESE    S
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                      C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                   STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                              PERIOD(12/ 1/76 TO 12/31/76)

                                             HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24


12/ 1                                         A   A   A   A   A   A   A   A   D   E   E   E   F   F   F
12/ 2     F   F   F   F   F   F   F   F   F   D   A   B   B   B   B   B   B   E   E   E   E   F   F   F
12/ 3     F   E   E   E   E   F   E   E   E   D   B   A   A   A   A   A   C   E   F   F   E   E   E   E
12/ 4     E   F   F   F   F   F   E   F   E   A   A   B   B   B   B   B   A   B   B   C   D   D   D   D
12/ 5     D   E   D   C   B   A   C   D   A   A   B   B   B   C   B   B   B   D   D   D   E   E   E   F
12/ 6     F   E   E   E   D   E   E   E   D   A   A   A   A   A   A   A   B   E   F   F   E   C   D   B
12/ 7     C   C   D   B   B   D   D   E   D   A   A   A   B   B   B   B   B   B   B   A   A   C   C   D
12/ 8     D   D   D   D   E   E   E   E   E   B   C   C   C   D   C   B   B   B   C   D   D   D   D   D
12/ 9     D   C   D   D   D   D   D   C   B   C   D   D   C   D   D   C   C   B   B   C   D   D   B   B
12/10     B   B   B   B   B   B   C   C   A   A   B   A   A   B   B   B   A   D   E   E   F   F   E   F
12/11     F   F   F   E   F   F   F   E   E   A   A   B   A   A   A   A   A   D   D   D   D   F   F   F
12/12     F   F   E   E   F   F   F   F   E   E   A   A   B   A   A   B   B   E   E   E   E   F   F   F
12/13     E   F   E   E   F   F   F   E   E   B   B   C   C   C   B   B   B   D   E   E   E   E   E   F
12/14     F   E   F   F   E   E   E   F   F   D   A   A   A   A   A   B   A   D   E   E   F   E   E   F
12/15     E   F   F   E   F   F   E   E   E   C   A   B   B   B   B   A   B   E   D   E   F   F   F   F
12/16     F   F   F   F   F   F   F   E   F   E   C   B   A   A   A   D   D   E   D   D   D   E   E   E
12/17     E   E   E   F   F   F   F   F   F   E   D   A   A   A   A   A   D   D   D   E   F   F   F   F
12/18     F   F   F   F   F   F   F   E   F   D   A   B   B   B   B   B   D   D   F   D   E   E   E   E
12/19     E   F   F   F   F   E   E   F   F   E   B   B   B   B   B   B   B   D   D   E   E   E   E   E
12/20     E   E   E   F   F   F   F   F   F   E   A   A   A   A   A   A   A   E   E   E   E   F   F   F
12/21     F   E   E   E   E   F   E   F   F   B   B   B   B   B   A   B   B   E   D   D   E   E   F   F
12/22     E   F   F   F   F   F   F   F   F   E   A   A   B   B   B   B   B   D   D   D   E   E   F   F
12/23     E   D   E   E   F   F   F   E   F   D   B   C   C   B   B   B   A   A   C   C   D   C   C   D
12/24     C   C   C   C   D   C   D   E   B   A   B   B   B   B   B   B   C   B   B   B   D   D   D   D
12/25     F   F   E   E   F   F   F   E   E   D   A   A   A   A   B   B   B   D   D   E   D   D   D   E
12/26     E   E   D   E   E   E   E   E   E   A   B   B   B   B   B   C   C   D   D   D   E   E   D   D
12/27     B   B   B   B   C   B   B   C   D   C   B   B   D   D   D   C   B   D   D   B   D   D   E   E
12/28     E   F   E   E   E   E   E   F   F   D   A   A   A   B       B   B   E   E   E   F   F   E   E
12/29     F   F   E   E   E   E   E   F   E   A   B   A   B   B   B   B   C   D   D   E   E   E   E   D
12/30     D   D   E   E   D   D   D   D   D   B   B   B   B   B   B   B   B   B   B   A   C   C   D   E
12/31     F   F   F   F   E   D   B   B   A   B   B   B   D   D   D   D   C   B   B   B   B   B   B   C
```

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                               C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                             STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                                        PERIOD(12/ 1/76 TO 12/31/76)

                                          HOURLY WIND AND DIRECTION
                                             A STABILITY CLASS

                                                 HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

12/ 1                                          0   2   3   3   3   3   3   2
                                              NE   E ESE NNE NNE   N NNE WNW
12/ 2                                              2
                                                   N
12/ 3                                                  3   2   1   4   4
                                                      SW   W   E   N   N
12/ 4                                          3   2                       6
                                               E NNE                      SW
12/ 5                      2           3   4
                           W         WNW  NW
12/ 6                                          1   1   4   5   4   2   2
                                             WNW  NW NNE  NE NNE ENE   S
12/ 7                                          2   4   4                               5   6
                                             SSE  SW  SW                               S   S
12/ 8

12/ 9

12/10                                      2   3       3   3               4
                                           W WNW      NW   W               N
12/11                                          1   2       3   2   2   1   1
                                             SSW  NW     WNW WNW   W   S  NW
12/12                                              1   3       4   3
                                                 ESE  NW      NW  NW
12/13

12/14                                              1   2   3   3   4       3
                                                  NE   N NNW  NW NNW       N
12/15                                              2                   3
                                                 NNW                  NW
12/16                                                      3   3   3
                                                           N   N   N
```

```
                              C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                          STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                                        PERIOD(12/ 1/76 TO 12/31/76)

                                          HOURLY WIND AND DIRECTION
                                             A STABILITY CLASS

12/17                                                 2   2   2   2   2
                                                     NW  NW WNW  NW  NW
12/18                                             3
                                                SSW
12/19

12/20                                             2   3   3   2   3   2   2
                                                 NE NNW WNW NNE NNE NNW WNW
12/21                                                             4
                                                                 SW
12/22                                             4   3
                                                  E ENE
12/23                                                                     5   7
                                                                        SSW   S
12/24                                         5
                                            WNW
12/25                                             2   2   2   2
                                                 SW ENE  NE   E
12/26                                         5
                                              S
12/27

12/28                                             1   2   3
                                                  S SSW NNW
12/29                                         4       3
                                             SE      SW
12/30                                                                                 1
                                                                                    NNW
12/31                                     5
                                        SSW
```

CORPORATION

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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
               STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                           PERIOD(12/ 1/76 TO 12/31/76)

                              HOURLY WIND AND DIRECTION
                                 B STABILITY CLASS

                                                        HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

12/ 1

12/ 2                                                             6    8    9   11   12   14
                                                                WSW   SW   SW  SSW  SSW  SSW
12/ 3                                                        2
                                                            SE
12/ 4                                                             4   10    8    7    8         9   14
                                                                 NW   SW  SSW    S  SSW       SSW  SSW
12/ 5                        2                               6    9    9         10    9    8
                           NNE                             NNW  NNW  NNW        NNW  NNW  NNW
12/ 6                                                                                       5                             15
                                                                                            S                            SSW
12/ 7                   7    2                                         6    9   11   11   14   14   13
                        S  SSE                                        SW   SW  SSW  SSW    S  SSW  SSW
12/ 8                                                   9                             11    9    4
                                                        S                            SSW    S  SSE
12/ 9                                              7                                             8    5                   9   12
                                                 SSE                                             W   NW                  NW  NNW
12/10    13   11    9    8    8    7                         5              5    5    9
        NNW  NNW   NW   NW   NW   NW                        NW              N  NNW  NNW
12/11                                                             3
                                                                WNW
12/12                                                                  4              4    6
                                                                      NW             NW  WNW
12/13                                                   8   12                  10    8    5
                                                        S  SSW                  SW   SW    S
12/14                                                                                 4
                                                                                      N
12/15                                                             6    8    7    6         6
                                                                 NW   NW    N    N        NW
12/16                                                             2
                                                                 NE
```

```
                         C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                      STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                                PERIOD(12/ 1/76 TO 12/31/76)

                                  HOURLY WIND AND DIRECTION
                                     B STABILITY CLASS

12/17

12/18                                                                  8    7    7    9    5
                                                                      SW   SW   SW   SW  WNW
12/19                                                             4    6    7    9    9   11   11
                                                                WNW  WNW  WNW  NNW    N  NNE  NNE
12/20

12/21                                                        4    7    7    7    4         6    8
                                                             S  SSW  SSW   SW  SSW        SW   SW
12/22                                                                       6    8    5    5    3
                                                                            N    N  NNW  NNW   NE
12/23                                                             8              6   12    7
                                                                SSW             SW   SW  SSW
12/24                                                   7         7    4    9    7    5    9        10    6    5
                                                        W        NW  NNW   NW    N    N    N         N   NW  WNW
12/25                                                                                 4    9   12
                                                                                    SSW   SW  SSW
12/26                                                             5   10    7    7   10
                                                                SSW   SW  SSW   SW  SSW
12/27       6   11   13   10        17   13                      10   11                       10             6
            S    S  SSW    S       SSW  SSW                      SW  WNW                      NNW           NNE
12/28                                                                            5        11   10
                                                                                SW       SSW  SSW
12/29                                                             4         5    6    8   12
                                                                SSW       SSW    S   SW  SSW
12/30                                                        9    9    7    7    8    9    7    7    6    3
                                                            SW   SW  WNW  WNW   NW  NNW   NW   NW  WNW  WSW
12/31                                  6   10         7    9   12                           11   13    8    9   12    9
                                     SSW  SSW       SSW   SW   SW                           SW  SSW  SSW  SSW  SSW   SW
```

```
                 C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                         PERIOD(12/ 1/76 TO 12/31/76)

                           HOURLY WIND AND DIRECTION
                              C STABILITY CLASS

                                               HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

12/ 1

12/ 2

12/ 3                                                                      4
                                                                         WNW
12/ 4                                                                               10
                                                                                     S
12/ 5                 5           2                          12
                     NW         SSW                         NNW
12/ 6                                                                                       12
                                                                                             S
12/ 7    16  14                                                                              5  15
        SSW   S                                                                              S SSW
12/ 8                                              13  14  14      14                   4
                                                    S SSW SSW     SSW                   S
12/ 9         7                       3      15          14          15  15          8
            SSW                     SSE     SSW         WSW         WSW  SW         NW
12/10                             6   5
                                 NW  NW
12/11

12/12

12/13                                                  13  12  12
                                                      SSW  SW  SW
12/14

12/15                                         1
                                            SSW
12/16                                             2
                                                ENE
```

```
                C•B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                        PERIOD(12/ 1/76 TO 12/31/76)

                           HOURLY WIND AND DIRECTION
                              C STABILITY CLASS

12/17

12/18

12/19

12/20

12/21

12/22

12/23                                              13  12                      17  18      18  15
                                                  SSW SSW                     SSW  SW     SSW SSW
12/24  17  13  15  10       5                                          12
      SSW SSW SSW SSW      SW                                           N
12/25

12/26                                                              15  15
                                                                  SSW SSW
12/27                  10          16      15                      13
                      SSW         SSW      SW                     NNW
12/28

12/29                                                                  14
                                                                      SSW
12/30                                                                                  1   0
                                                                                      WNW  NW
12/31                                                                  16                          13
                                                                       SW                         SSW
                        C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                     STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                                PERIOD(12/ 1/76 TO 12/31/76)

                                 HOURLY WIND AND DIRECTION
                                    D STABILITY CLASS

                                                 HOUR
             1     2     3     4     5     6     7     8     9    10    11    12    13    14    15    16    17    18    19    20    21    22    23    24

12/ 1                                                                                                             3
                                                                                                                  S
12/ 2                                                        4
                                                           ESE
12/ 3                                                        3
                                                           SSE
12/ 4                                                                                                                               4     4     5     5
                                                                                                                                  WNW    NW   WSW   WSW
12/ 5        2           7                       2                                                                5     2     1
            NW          NW                     WSW                                                                N     N    NE
12/ 6                                1                       0                                                                                  6
                                    SE                       S                                                                                  S
12/ 7                   11                 3     6           6                                                                                       13
                         S                 S   SSW           S                                                                                      SSW
12/ 8        8     8    13     8                                                       14                                     5    16    29    30     9
           SSW   SSW   SSW   SSW                                                      SSW                                     S   SSW   SSW     S     S
12/ 9       12          18    14    25    19    13                      21    15          16    17                                  4     6
             S           S     S     S     S     S                     SSW    SW          SW    SW                                NNW    NW
12/10                                                                                                             3
                                                                                                                 NE
12/11                                                                                                             2     6     3     1
                                                                                                                  N     W     W   SSW
12/12

12/13                                                                                                             7
                                                                                                                  S
12/14                                                        2                                                    2
                                                           ESE                                                   NE
12/15                                                                                                                   0
                                                                                                                       NE
12/16                                                                                         4     1                   3     1     0
                                                                                            NNW     N                 WNW     W    NE
```

CORPORATION

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                C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
               STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                         PERIOD(12/ 1/76 TO 12/31/76)

                            HOURLY WIND AND DIRECTION
                              D STABILITY CLASS

12/17                                            0                       2   2   0
                                               NNE                       W WNW ESE
12/18                                        1                           2   0       1
                                           ENE                         NNW  SW     SSW
12/19                                                                        6   2
                                                                           NNE WSW
12/20
12/21                                                                            2   1
                                                                                SW   E
12/22                                                                        4   3   1
                                                                           NNW WNW  SE
12/23        2                               5                                          22          17
           SSE                             SSW                                         SSW         SSW
12/24                    4       6                                                       3   2   1   0
                        SW       W                                                     NNW NNE   E SSE
12/25                                        2                              11   8       7   9   9
                                             S                             SSW SSW       S SSW SSE
12/26            7                                                          14   6   5           5   7
                 S                                                         SSW   S   S           S  SE
12/27                                   17              23  21  15           7   3       8   8
                                        SW             WNW WNW  NW           N ENE     NNW  NW
12/28                                        2
                                             S
12/29                                                                       19   5                   4
                                                                           SSW   S                 SSW
12/30    5   8          16  10  10  10   3                                                       0
       SSW SSW         SSW SSW SSW SSW SSW                                                      NE
12/31                        5                          14  17  17  17
                           SSW                          SW  SW  SW  SW
```

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                     C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                  STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                             PERIOD(12/ 1/76 TO 12/31/76)

                              HOURLY WIND AND DIRECTION
                                  E STABILITY CLASS

                                                          HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

12/ 1                                                                                              1    3    7
                                                                                                  SW   SE    S
12/ 2                                                                                        15    5    2    2
                                                                                            SSW   SE   SE  SSE
12/ 3          4    2    3    6    2    3    4    3                                          10              1    1    3    2
               S    S  SSE  SSW  SSE  ESE    S  SSW                                          SW             NW  NNW  WSW   SW
12/ 4     1                             4         3
         SE                             S        SE
12/ 5          3                                                                                                 2    2    0
              NW                                                                                               WNW  WNW    S
12/ 6          2    0    2         1    1    1                                                9              11
              SE   NW  ENE       ESE    W   SW                                                S             SSW
12/ 7                                        3
                                             S
12/ 8                         4    4    6    6    3
                              S  SSW  SSW  SSW  SSW
12/ 9

12/10                                                                                              1    2              2
                                                                                                   E  SSE              E
12/11                    1                   1    1
                       SSW                  NE   SE
12/12               2    0                        0    1                                     4    2    2    1
                  WSW    E                       SE   SW                                   WNW  WNW   SW   SE
12/13     2         0    2                   1    5                                               8    6    6    1    2
         SE       NNW   SE                 SSE    S                                               S    S    S   SW  SSW
12/14          4              2    2    1                                                        3    1         1    0
             SSW             SW  SSW    E                                                        W   SE         N  ENE
12/15     2              3              2    1    1                                          4         1
        WSW             SE              W  WNW   NW                                        NNW        SW
12/16                                        1         0                                     3                   0    0    1
                                             W         E                                     W                 NNE  NNE   NW
```

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                      C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                              PERIOD(12/ 1/76 TO 12/31/76)

                                 HOURLY WIND AND DIRECTION
                                    E STABILITY CLASS

12/17    2   0   0                           0                                       0
         W WSW NNE                         NNW                                       N
12/18                                3                                           3       1   0   0   1
                                   SSE                                         SSW       S   S  NW   W
12/19    0                   1   0           5                                       2   3   3   4   1
       NNE                 WSW WSW         NNW                                     NNW NNE  NW WNW   W
12/20    0   0   0                           2                               2   3   0   2
       SSW SSE WNW                         ESE                               W WSW  SW SSE
12/21        3   2   2   5       3                                          10           0   0
           SSE  SE  SE SSE       E                                          SW           E SSW
12/22    2                                   4                                           1   1
       ESE                                 ESE                                         ESE   S
12/23    3       2   1               4
       SSW     SSE   S               S
12/24                                4
                                    NW
12/25            1   0               2   3                                       9               9
                 S   S             SSW   S                                     SSW               S
12/26    7  11       4   7   4   4   5   3                                           5   7
       SSW SSW       S SSE SSE   S SSW SSW                                         SSE SSE
12/27                                                                                            5   3
                                                                                                 W   W
12/28    4       6   4   2   1   1                                          11   7   8           2   3
       WSW     WSW WSW   W  SE  SE                                         SSW SSW SSW         SSW SSE
12/29            9  13  10   6   6       4                                       3   4   3   4
               SSW SSW SSW SSW SSW       S                                       S   S   S SSW
12/30            9   6                                                                               0
               SSW   S                                                                               E
12/31                    1
                       SSW
                      C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                   STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                               PERIOD(12/ 1/76 TO 12/31/76)

                                  HOURLY WIND AND DIRECTION
                                     F STABILITY CLASS

                                              HOUR
         1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24


12/ 1                                                                                       2   1   1
                                                                                           SW ESE NNE
12/ 2    1   3   3   0   2   2   0   0   2                                                  2   3   2
       ENE  SE SSW NNW ESE SSE   S   N NNE                                                 SE   S   S
12/ 3    3                                                                      3   1
         S                                                                    SSW   N
12/ 4        0   0   0   1   0       4
           SSE   W SSW SSW NNW      SE
12/ 5                                                                                               2
                                                                                                    S
12/ 6    2                                                                     11  10
       WNW                                                                    SSW SSW
12/ 7

12/ 8

12/ 9

12/10                                                                                   1   1       2
                                                                                       SE   W     ESE
12/11    1   2   1       0   2   2                                                          3   3   2
         E ESE WNW      NE  SW  SW                                                        ESE ESE ESE
12/12    1   4           0   2   1   1                                                      2   1   1
       ESE WNW          NE   E SSW  SW                                                      S  SW SSE
12/13        1           5   4   4                                                                  6
           SSW         SSE SSE SSE                                                                  S
12/14    9       2   2               1   2                                              1           2
       SSW     SSE SSE              SW NNE                                             SE         WNW
12/15        3   5       1   2                                                          1   2   2   2
           SSW   S       S   E                                                         SE  NE   E ESE
12/16    0   2   3   1   1   1   2       2
        SW SSE SSW ENE  SE ENE WNW     ESE
```

```
                     C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                   STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                           PERIOD(12/ 1/76 TO 12/31/76)

                              HOURLY WIND AND DIRECTION
                                 F STABILITY CLASS

12/17                0   0   1   1   1   0                                               0   0   3   2
                     N   E ESE WNW   E   E                                             NNE WNW ENE SSE
12/18    2   6   8   5   2   1   5       3
       SSW SSW   S SSE   S SSE SSE     ESE
12/19        2   2   2   2           1   2
             E ESE  SW WSW         NNE ENE
12/20                1   1   0   0   0   1                                                   1   2   1
                     E  SE WSW  NW NNW   S                                                  SE  SE SSE
12/21    2                   2       6   1                                                       2   1
        SE                 SSW     SSE  SE                                                       W WSW
12/22        2   1   2   1   0   0   1   1                                                       1   2
           ESE  SE  SE SSW NNE  NE NNW SSE                                                       S   S
12/23                    3   2   5       4
                         S   S   S       S
12/24

12/25    1   0           3   2   1
       WSW WSW           S SSW   E
12/26

12/27

12/28        5                       1   2                                               3   3
           WSW                       S SSW                                               S SSW
12/29    6   6                       7
         S SSW                     SSW
12/30

12/31    2   1   0   1
         E   E NNW WNW
```

APPENDIX A

STABILITY WIND ROSE DIAGRAMS

APPENDIX A
STABILITY WIND ROSE DIAGRAMS

According to the data presented in AEC Safety Guide No. 23, the relationships between stability classes and σ_Θ are as follows (the values shown are averages for each stability classification...σ_Θ is the standard deviation of horizontal wind direction fluctuations).

Stability Classification	Pasquill Categories	Average Values σ_Θ (degrees)
Extremely Unstable	A	25.0°
Moderately Unstable	B	20.0°
Slightly Unstable	C	15.0°
Neutral	D	10.0°
Slightly Stable	E	5.0°
Moderately Stable	F	2.5°

Stability wind roses obtained at the trailers in the monitoring network are displayed in the following tables. Because of the relatively low heights above the surface (9 meters) at which the wind data is taken, the stability distributions are skewed toward the unstable end of the spectrum. That is, the unstable classes (A, B, and C) have a much higher frequency of occurrence than would be obtained with the Pasquill method of stability categorization (or with instruments at higher levels).

Table 1 depicts the frequency distribution of Pasquill stability categories based on σ_Θ from data collected by M. M. Pendergast and T. V. Crawford at the Savannah River Plant ("Actual Standard Deviations of Vertical and Horizontal Wind Direction Compared to Estimates from Other Measurements", Symposium on Atmospheric Diffusion and Air Pollution, September 9-13, 1974). Three distinct range patterns of stability class

distributions were observed: low, mid, and high, according to the height at which the σ_Θ measurements were taken.

TABLE 1

FREQUENCY DISTRIBUTION OF PASQUILL STABILITY CATEGORIES

	Stability Categories based on σ_θ							
Height, m	A $\sigma_\theta > 23$	B $18 \leq \sigma_\theta < 23$	C $13 \leq \sigma_\theta < 18$	D $8 \leq \sigma_\theta < 13$	E $4 \leq \sigma_\theta < 8$	F $2 \leq \sigma_\theta < 4$	G $\sigma_\theta < 2$	
10	22.6	13.3	21.8	23.3	8.9	0.4	3.5	LOW RANGE
35	19.3	11.3	19.4	32.4	15.9	0.7	0.5	
91	9.6	6.7	13.5	21.7	29.5	15.4	2.5	MID RANGE
137	9.3	5.3	11.7	20.8	28.5	18.4	5.5	
182	7.0	2.9	6.3	17.1	25.9	25.5	14.7	HIGH RANGE
243	7.7	4.3	9.4	17.7	27.6	22.9	10.4	
304	7.2	3.7	8.0	17.2	23.7	23.9	11.3	

Also, Figure 1 (from D. H. Slade, Meteorology and Atomic Energy, 1968, p. 52) demonstrates that the line representing very stable conditions (which by their nature are associated with light winds) branches into three separate lines near the ground. The curve at the left represents the smallest values of σ_Θ usually observed. The curve that branches off to the right reflects the contribution of very low-level wind direction meander to the total standard deviation. These meandering oscillations decrease in amplitude very rapidly with height under stable conditions. The central curve represents typical inversion conditions. Actually, for a given stability condition, values of σ_Θ will always be greater when the wind is light than when it is strong. This phenomena is most noticeable in the lowest layers.

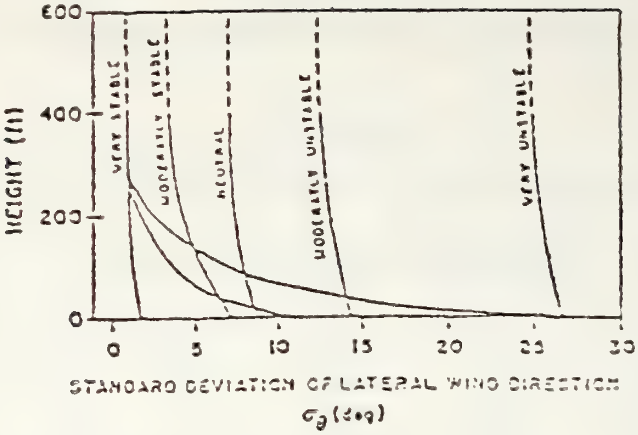

FIGURE 1

The vertical variation of the lateral wind-direction standard deviation (σ_Θ) for various stability regimes. The curves represent average or typical conditions with the exception of the two outer "very stable" lines, which represent extremes.

The large surface values of σ_Θ for unstable conditions do not decrease very rapidly with height. As in the case of very stable conditions, the greatest lateral fluctuations during a very unstable thermal structure occur with very light winds. As a general rule, for a given insolation condition, increasing wind speeds are associated with profiles of σ_Θ that tend toward neutral stability.

The majority of the trailers in the network recorded very light winds throughout the month. Therefore, the stability distributions had a predominance of high σ_Θ values and, hence, unstable classifications. Those trailers with the highest average winds (and fewest nearby obstacles to the flow) generally had the more reasonable and representative low-level stability class distributions.

```
                                        STABILITY WIND ROSE DIAGRAM

                                           C-B SHALE OIL PROJECT
                               LEVEL =  6 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - A
                                                                 WIND DIRECTION
                       N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL   %
GROUP MAX SPEED      11.   11.    4.    4.    4.    4.    5.    7.    6.    8.    9.   12.    9.    8.   10.   11.
    MPH


    GT   24    :                                                                                                   :        0.

  18 -   24    :                                                                                                   :        0.

  12 -   18    :                                                                 1                                 :    1   0.

   7 -   12    :      24     5                                   1           7     4     3     1     3     2    21 :   71   5.

   3 -    7    :      62    23     9    11    11    13    17    32    50    35    29    14     9    17    12    31 :  375  26.

    LT    3    :      71    69    72    63    79    85    78    79    93    78    49    50    35    43    37    36 : 1017  69.

     TOTAL     :     157    97    81    74    90    98    95   112   143   120    82    68    45    63    51    88 : 1464

    PERCENT    :     11.    7.    6.    5.    6.    7.    6.    8.   10.    8.    6.    5.    3.    4.    3.    6. :      100.
                 ..............................................................................................................

                             TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       329(  22.47 %)
```

```
                              STABILITY WIND ROSE DIAGRAM

                                C-B SHALE OIL PROJECT
                     LEVEL =  8 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - B
                                                       WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED    10.  10.   4.   4.   4.   4.   5.   8.   9.  13.  14.  12.  11.  17.  10.   8.
    MPH


   GT   24    :                                                                                 :       0.

  18 -  24    :                                                                                 :       0.

  12 -  18    :                                                   4    3    2         3         :   12  1.

   7 -  12    :  3    3                                 1   11   42   17    4    1    5    2    3 :   92 10.

   3 -   7    : 19    6    7    8    9   10   11   29   45   66   28    8    4   37   19    7 :  313 35.

   LT    3    : 23   15   19   33   40   33   37   38   53   52   38   25   24   22   11    8 :  471 53.

    TOTAL     : 45   24   26   41   49   43   48   68  109  164   86   39   29   67   32   18 :  888

   PERCENT    :  5.   3.   3.   5.   6.   5.   5.   8.  12.  18.  10.   4.   3.   8.   4.   2. :      100.
                ........................................................................................

                 TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        116(  13.06 %)
```

```
                                STABILITY WIND ROSE DIAGRAM

                                   C-B SHALE OIL PROJECT
                          LEVEL =  8 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - C
                                                        WIND DIRECTION
                          N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED         10.   9.   4.   5.   4.   5.   8.   8.  21.  18.  16.  14.  18.  21.  11.   9.
    MPH


     GT   24    :                                                                                   !        0.

   18 -   24    :                                                4    1              1    6         !   12   0.

   12 -   18    :                                               24   48   20    3    5   11         !  111   4.

    7 -   12    :   10    3                        1    4  124  322   56   10    4   15   33    4   !  586  22.

    3 -    7    :   26    5   21   45   39   49   46   76  134  139   94   32   32   93   73   17   :  921  35.

     LT    3    :   23   22   47   75   92   76   72   66   75  104  123   55   73   56   26   12   !  997  38.

      TOTAL     :   59   30   68  120  131  125  119  146  361  614  293  100  115  181  132   33   ! 2627

     PERCENT    :   2.   1.   3.   5.   5.   5.   5.   6.  14.  23.  11.   4.   4.   7.   5.   1.   !      100.
                 ...............................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       159(   6.05 %)
```

CORPORATION

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                                   STABILITY WIND ROSE DIAGRAM

                                       C-B SHALE OIL PROJECT
                         LEVEL =  8 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - D
                                                                 WIND DIRECTION
                        N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  X
GGROUP MAX SPEED       9.   15.    4.    5.    5.    5.    5.   10.   22.   15.   16.    7.    4.   19.   10.    9.
     MPH


   GT    24     :                                                                                               :        0.

 18 -    24     :                                                16                                1            :   17   1.

 12 -    18     :            1                                   27    18     3                    2            :   51   2.

  7 -    12     :      3     4                             14   100   121    18     1              4    13     4 :  282   9.

  3 -     7     :     24    13    25    82    95    92   111    69   121    97   290    52    30    75    64    14 : 1254  41.

   LT     3     :     30    28    50    91   113   130   105    65    93   211   339    70    67    30    11    18 : 1451  47.

    TOTAL       :     57    46    75   173   208   222   216   148   357   447   650   123    97   112    88    36 : 3055

   PERCENT      :     2.    2.    2.    6.    7.    7.    7.    5.   12.   15.   21.    4.    3.    4.    3.    1. :      100.
                .....................................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       158(    5.17 X)
```

```
                                    STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                           LEVEL =  8 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - E
                                                           WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED     4.   3.   4.   5.   4.   5.   5.   5.  19.   6.   6.   5.   4.   3.   4.   0.
    MPH


    GT   24    :                                                                                :        0.

  18 -   24    :                                             1                                  :     1  0.

  12 -   18    :                                             0                                  :     0  0.

   7 -   12    :                                             1                                  :     1  0.

   3 -    7    :     2    1    1    6   10    9    8    6   14   11   44    4    3    1    2      :   122 42.

    LT    3    :    11    0    6    8   13    8   16    1    7   23   58    6    7    1    1      :   166 57.

    TOTAL      :    13    1    7   14   23   17   24    7   23   34  102   10   10    2    3    0 :   290

   PERCENT     :    4.   0.   2.   5.   8.   6.   8.   2.   8.  12.  35.   3.   3.   1.   1.   0. :      100.
                ..........................................................................................

                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        31(  10.69 %)
```

```
                                    STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                            LEVEL =  8 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - TOTAL
                                                             WIND DIRECTION
                     N  NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED    11.  15.    4.    5.    5.    5.    8.   10.   22.   18.   16.   14.   18.   21.   11.   11.
    MPH


   GT   24    :                                                                                            :         0.

  18 -  24    :                                                21     1                   1     7          :    30   0.

  12 -  18    :          1                                     51    70    26     6     5    16          :   175   2.

   7 -  12    :   40    15                         1    20    236   492    95    18     6    27    50   32 :  1032  12.

   3 -   7    :  133    48    63   152   164   173   193   212   364   348   485   110    78   223   170   69 :  2985  36.

   LT    3    :  143   125   191   274   341   336   312   247   319   476   642   207   210   153    87   69 :  4132  49.

    TOTAL     :  316   189   254   426   505   509   506   479   991  1387  1248   341   300   426   307  170 :  8354

   PERCENT    :   4.    2.    3.    5.    6.    6.    6.    6.   12.   17.   15.    4.    4.    5.    4.   2. :        100.
              ..........................................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =       793(   9.49 %)


                                PERCENTAGE OF A      STABILITY =  17.52 %
                                PERCENTAGE OF B      STABILITY =  10.63 %
                                PERCENTAGE OF C      STABILITY =  31.45 %
                                PERCENTAGE OF D      STABILITY =  36.57 %
                                PERCENTAGE OF E      STABILITY =   3.47 %
```

```
                                    STABILITY WIND ROSE DIAGRAM

                                       C-B SHALE OIL PROJECT
                             LEVEL = 30 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS = A
                                                            WIND DIRECTION
                     N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED    12.   12.   6.   5.   5.   6.   5.   7.   8.   9.  10.  11.   5.   8.  10.  13.
    MPH


   GT   24    :                                                                                :        0.

 18 -   24    :                                                                                :        0.

 12 -   18    :     6     2                                                                  1 :      9  1.

  7 -   12    :    19     5                                3    6    6    5    2         1    3    9 :     59  6.

  3 -    7    :    66    22   14   21   27   35   25   36   39   31   17   14   10   10   10   26 :    403 44.

   LT    3    :    26    20   29   21   48   44   42   33   30   25    9   24   24   30   16   19 :    440 48.

    TOTAL     :   117    49   43   42   75   79   67   72   75   62   31   40   34   41   29   55 /    911

   PERCENT    :   13.    5.   5.   5.   8.   9.   7.   8.   8.   7.   3.   4.   4.   5.   3.   6. :       100.
                 ......................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        72(   7.90 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                       C-B SHALE OIL PROJECT
                              LEVEL = 30 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - B
                                                            WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED    12.   9.   4.   5.   4.   5.   4.   9.  12.  15.  15.   7.  11.  17.   9.  15.
    MPH


   GT   24   :                                                                                 :       0.

 18 -   24   :                                                                                 :       0.

 12 -   18   :   1                                         1    3    3              2         1 :   11  2.

  7 -   12   :   3    1                               2    4   16   11    1    1    3    3    2 :   47 10.

  3 -    7   :  11    9   10   15   18   22   10   24   24   23   19    8    6   22   12    5 :  238 49.

   LT    3   :   3    5   10   10   27   19   14   16   20    7   13   12    9   13    8    2 :  188 39.

   TOTAL     :  18   15   20   25   45   41   24   42   49   49   46   21   16   40   23   10 :  484

   PERCENT   :   4.   3.   4.   5.   9.   8.   5.   9.  10.  10.  10.   4.   3.   8.   5.   2. :      100.
                .......................................................................................

                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       25(   5.17 %)
```

```
                                    STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                            LEVEL = 30 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - C
                                                            WIND DIRECTION
                        N    NNE    NE   ENE    E   ESE    SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW  TOTAL  X
GROUP MAX SPEED        14.   11.    5.    6.    5.   5.    6.   11.   16.  19.  18.   16.  14.  27.  15.  13.
    MPH


   GT    24    !                                                                             1               !    1  0.

 18 -    24    !                                                       3    1                3               !    7  0.

 12 -    18    !    1                                            15   63   24    5     1     4    3     4  !  120  8.

  7 -    12    !    8     3                                10    56  168   47    6     1    32   26    16  !  373 25.

  3 -     7    !   18     9    12    31    48    50    48   36    87   79   31   23    27    72   59    13  !  643 43.

   LT     3    !    6    13    20    16    32    23    24   24    34   32   39   23    25    18   13    11  !  353 24.

    TOTAL      !   33    25    32    47    80    73    72   70   192  345  142   57    54   130  101    44  / 1497

   PERCENT     !   2.    2.    2.    3.    5.    5.    5.   5,   13.  23.   9.   4.    4.    9.   7.    3.  !       100.
               ......................................................................................................

                   TOTALI NUMBER OF CALMS DISTRIBUTED ABOVE -          20(   1.34 %)
```

CORPORATION

```
                                STABILITY WIND ROSE DIAGRAM

                                  C-B SHALE OIL PROJECT
                        LEVEL = 30 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS = D
                                                     WIND DIRECTION
                       N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED      14.  22.   6.   6.   6.   7.  10.  14.  26.  23.  19.  16.  24.  25.  13.  15.
     MPH


   GT    24    :                                               8                    1    6            :   15  0.

 18 -    24    :            2                                 21   13    5          3    8            :   52  1.

 12 -    18    :     1      1                           4    115  184   46    5     2    5    5   13  :  381 10.

  7 -    12    :     8      5                 2    6   40    148  309   54   10     5   53   84   29  :  753 20.

  3 -     7    :    25     12   23   97  167  201  183  134  146  211  228   81    99  129   45   35  : 1816 49.

   LT     3    :     7     10   20   22   31   44   59   71   91   99   90   43    32   23   17   18  :  677 18.

   TOTAL       :    41     30   43  119  198  247  248  249  529  816  423  139   142  224  151   95  : 3694

   PERCENT     :     1.     1.   1.   3.   5.   7.   7.   7.  14.  22.  11.   4.   4.   6.   4.   3.  :      100.
               ...............................................................................................

                       TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =       48(   1.30 %)
```

STABILITY WIND ROSE DIAGRAM

C-B SHALE OIL PROJECT
LEVEL = 30 FEET   PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS = E

GROUP MAX SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	%
	10.	14.	5.	6.	6.	6.	8.	12.	26.	16.	13.	15.	8.	18.	11.	14.		
GT 24									6								6	1.
18 - 24									4					1			5	0.
12 - 18		4						1	16	10	1	1		0		2	35	3.
7 - 12	4	8					5	29	40	26	6	1	2	17	11	5	154	15.
3 - 7	23	8	7	19	56	69	66	54	28	110	99	23	32	31	11	6	642	61.
LT 3	9	4	5	7	2	8	15	27	22	33	41	12	9	2	3	4	203	19.
TOTAL	36	24	12	26	58	77	86	111	116	179	147	37	43	51	25	17	1045	
PERCENT	3.	2.	1.	2.	6.	7.	8.	11.	11.	17.	14.	4.	4.	5.	2.	2.		100.

TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE = 5(0.48 %)

CORPORATION

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                                         STABILITY WIND ROSE DIAGRAM

                                              C-B SHALE OIL PROJECT
                                   LEVEL = 30 FEET   PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - TOTAL
                                                                        WIND DIRECTION
                          N   NNE    NE   ENE     E   ESE    SE   SSF     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED         14.   22.    6.    6.    6.    7.   10.   14.   26.   23.   19.   16.   24.   27.   15.   15.
     MPH


    GT    24    :                                                          14                           1     7                :   22  0.

  18 -    24    :              2                                           25    16     6               3    12                :   64  1.

  12 -    18    :        9     7                                      5   147   260    74    11         3    11     8    21   :  556  7.

   7 -    12    :       42    22                      2    11    84   254   525   123    20         9   106   127    61   : 1386 18.

   3 -     7    :      143    60    66   183   316   377   332   284   324   454   394   149   174   264   137    85   : 3742 49.

   LT      3    :       49    52    84    77   141   140   157   173   199   203   199   115   102    88    57    54   : 1890 25.

    TOTAL       :      243   143   150   260   457   519   500   546   963  1458   796   295   292   488   329   221   : 7660

    PERCENT     :       3.    2.    2.    3.    6.    7.    7.    7.   13.   19.   10.    4.    4.    6.    4.    3.   :      100.
                ..............................................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =       170(   2.22 %)


                                  PERCENTAGE OF A      STABILITY -  11.89 %
                                  PERCENTAGE OF B      STABILITY -   6.32 %
                                  PERCENTAGE OF C      STABILITY -  19.54 %
                                  PERCENTAGE OF D      STABILITY -  48.22 %
                                  PERCENTAGE OF E      STABILITY -  13.64 %
```

STABILITY WIND ROSE DIAGRAM

C-B SHALE OIL PROJECT
LEVEL =100 FEET PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - A

GROUP MAX SPEED MPH		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		TOTAL	%
		16.	14.	6.	5.	6.	6.	8.	9.	9.	10.	12.	7.	5.	10.	10.	16.			
GT 24	:																	:		0.
18 - 24	:																	:		0.
12 - 18	:	9	2									1					6	:	18	2.
7 - 12	:	17	6					1	4	10	5	5	1		1	1	6	:	57	5.
3 - 7	:	65	25	17	12	16	42	53	58	70	42	24	9	7	15	12	23	:	490	45.
LT 3	:	26	22	28	29	35	48	66	71	41	25	36	24	21	26	10	12	:	520	48.
TOTAL	:	117	55	45	41	51	90	120	133	121	72	66	34	28	42	23	47	:	1085	
PERCENT	:	11.	5.	4.	4.	5.	8.	11.	12.	11.	7.	6.	3.	3.	4.	2.	4.	:		100.

TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE = 133(12.26 %)

```
                                     STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                           LEVEL =100 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - B
                                                       WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED     11.   5.   5.   4.   5.   6.   7.   7.  12.  13.  14.  14.   7.  20.  10.  13.
    MPH


     GT   24    :                                                                               :        0.

   18 -   24    :                                                                  1            :     1  0.

   12 -   18    :                                            1    1    3    1         0       1 :     7  1.

    7 -   12    :    2                        1    2   11   18    9    3    1    0    1    5 :    53 11.

    3 -    7    :   17    3    8    5    9   20   41   30   33   30   11    8    7   10    8    1 :   241 51.

     LT    3    :    2    5    4   11   11   17   14   13   25    9   16   10   15    9    7    1 :   169 36.

      TOTAL     :   21    8   12   16   20   37   56   45   70   58   39   22   23   20   16    8 /   471

     PERCENT    :    4.   2.   3.   3.   4.   8.  12.  10.  15.  12.   8.   5.   5.   4.   3.   2. :      100.
                ..........................................................................................

                       TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =         28(   5.94 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                          LEVEL =100 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - C
                                                      WIND DIRECTION
                      N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL %
GROUP MAX SPEED      11.  14.   6.   6.   6.   6.   7.  12.  15.  22.  19.  16.  17.  27.  16.  14.
    MPH


     GT   24    :                                                                  3              :    3  0.

   18 -   24    :                                              8    2              4              :   14  1.

   12 -   18    :          3                             1   11   53   32    7    2    1    4    3 :  117  8.

    7 -   12    :    4     2                        3   11   48  111   57    9    1   18   29   12 :  305 22.

    3 -    7    :   18    18   10   18   24   40   78   50   66   50   39   25   19   75   73   11 :  614 44.

     LT    3    :   12     9   14   22   22   25   29   28   28   22   21   30   31   21   29   11 :  354 25.

     TOTAL      :   34    32   24   40   46   65  110   90  153  244  151   71   53  122  135   37 : 1407

    PERCENT     :    2.    2.   2.   3.   3.   5.   8.   6.  11.  17.  11.   5.   4.   9.  10.   3. :     100.
                ...........................................................................................

                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        49(    3.48 %)
```

CORPORATION

```
                                 STABILITY WIND ROSE DIAGRAM

                                    C-B SHALE OIL PROJECT
                         LEVEL =100 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - D
                                                      WIND DIRECTION
                      N   NNE    NE   ENE    E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED     16.   18.    4.    5.   7.    8.    9.   15.   32.   26.   23.   20.   25.   33.   21.   17.
    MPH


    GT   24   :                                                 20     4                   1    11              :   36   1.

  18 -   24   :           1                                     26    78    34     5       1     3     2        :  150   4.

  12 -   18   :     7     6                              6     116   351    64     6       2     5    10    29  :  602  17.

   7 -   12   :    16     5                2    19    42    65   137   261    95    30      13    71   124    58  :  938  27.

   3 -    7   :    41    22    17    18   55   115   168   100   116    96    63    76     105   149    82    46  : 1269  36.

    LT    3   :    17    13    14    18   28    37    67    52    49    29    42    31      37    25    21    22  :  502  14.

    TOTAL     :    81    47    31    36   85   171   277   223   464   819   298   148     159   264   239   155  ; 3497

   PERCENT    :    2.    1.    1.    1.   2.    5,    8.    6,   13.   23.    9.    4.      5.    8,    7.    4,  :      100.
           ..........................................................................................................

                   TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        65(   1,86 %)
```

```
                                 STABILITY WIND ROSE DIAGRAM

                                    C-B SHALE OIL PROJECT
                          LEVEL =100 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - E
                                                             WIND DIRECTION
                            N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW  TOTAL  %
( GROUP MAX SPEED          14.  25.   4.   4.    7.   8.   7.   15.  32.  21.  23.  16.   9.  28.  13.  18.
      MPH

    GT   24    :                1                                   12                          2              :  15  2.

  18 -   24    :                0                                    9    6    8                0          1   :  24  2.

  12 -   18    :       6        5                              3    30   55    6    1           1    3     6   : 116 12.

   7 -   12    :       5        4              1    8   16    27    37   34   24    9    4     24   26    29   : 248 25.

   3 -    7    :      13        9    2    5   20   50   81    42    38   25   17   24   27     34   24    19   : 430 43.

    LT    3    :       9        6    5    8   13   17   17    21    20    9    7   10    6      3    3     6   : 160 16.

     TOTAL     :      33       25    7   13   34   75  114    93   146  129   62   44   37     64   56    61   : 993

    PERCENT    :       3.       3.   1.   1.   3.   8.  11.    9.   15.  13.   6.   4.   4.     6.   6.    6.  :     100.
                     ...................................................................................................

                              TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        37(   3.73 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                          C-B SHALE OIL PROJECT
                                LEVEL =100 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - TOTAL
                                                                WIND DIRECTION
                          N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED          16.   25.    6.    6.    7.    8.    9.   15.   32.   26.   23.   20.   25.   33.   21.   18.
     MPH

    GT   24   :                1                                        32     4                   1    16                :   54  1.

  18 -   24   :                1                                        35    92    44     5     1     8     2     1 :  189  3.

  12 -   18   :     22        16                                  10   158   460   106    15     4     7    17    45 :  860 11.

   7 -   12   :     44        17                    3    27    63   109   243   429   190    52    19   114   181   110 : 1601 21.

   3 -    7   :    154        77    54    58   124   267   421   280   323   243   154   142   165   283   199   100 : 3044 41.

    LT    3   :     64        55    65    88   110   145   196   186   164    97   125   109   115    90    75    54 : 1738 23.

     TOTAL    :    284       167   119   146   237   439   680   585   955  1325   619   323   305   518   474   310 / 7486

    PERCENT   :      4.        2.    2.    2.    3.    6.    9.    8.   13.   18.    8.    4.    4.    7.    6.    4. :       100.
                 ..............................................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        312(   4.17 %)


                                PERCENTAGE OF A      STABILITY -  14.49 %
                                PERCENTAGE OF B      STABILITY -   6.29 %
                                PERCENTAGE OF C      STABILITY -  18.80 %
                                PERCENTAGE OF D      STABILITY -  46.71 %
                                PERCENTAGE OF E      STABILITY -  13.26 %
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                           LEVEL =200 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - A
                                                         WIND DIRECTION
                    N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED   16,  17,   6,   5,   5,   6,   7,  10,  12,  12,   9,  14,   5,  11,  14,   9,
     MPH


     GT   24   :                                                                                :        0,

   18 -   24   :                                                                                :        0,

   12 -   18   :    4    6                                     1    1         1              3     :   16  2,

    7 -   12   :   21    5                        1    7   20   11    2    2         3    2    6 :   80  9,

    3 -    7   :   51   32   12    9   10   17   23   48   91   79   22    9   10   15   14   25 :  467 50,

     LT    3   :   20   25   20   20   16   19   34   35   60   29   19   22   16   13   13   15 :  376 40,

     TOTAL     :   96   68   32   29   26   36   58   90  172  120   43   34   26   31   32   46 /  939

     PERCENT   :  10,   7,   3,   3,   3,   4,   6,  10,  18,  13,   5,   4,   3,   3,   3,   5, :     100,
                  ...............................................................................................

                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =       113(  12,03 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                          LEVEL =200 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS - B
                                                                 WIND DIRECTION
                        N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED        10.   4.   6.   3.   7.   4.   5.   6.  10.  11.  17.  10.   8.   7.   6.  12.
    MPH


    GT   24    :                                                                                   :        0.

 18 -    24    :                                                                                   :        0.

 12 -    18    :                                                      1                         1  :    2   0.

  7 -    12    :    2                   1                     21   23   10    3    1    1         0  :   62  13.

  3 -     7    :    6    4    5    2    6   10   12   25   62   67   16    5   11   13    9    2  :  256  54.

   LT     3    :    4    5    5    2    9    8   19   18   14   16    9    6   11   12    6    5  :  150  32.

    TOTAL      :   12    9   12    4   16   18   31   43   97  106   36   14   23   26   15    8  :  470

   PERCENT     :   3.   2.   3.   1.   3.   4.   7.   9.  21.  23.   8.   3.   5.   6.   3.   2.  :      100.
                ..........................................................................................

                        TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        28(   5.96 %)
```

CORPORATION

```
                              STABILITY WIND ROSE DIAGRAM

                                  C-B SHALE OIL PROJECT
                         LEVEL =200 FEET  PERIOD(12/ 1/76 TO 12/31/76)

 STABILITY CLASS = C
                                                      WIND DIRECTION
                         N  NNE   NE  ENE    E  ESE   SE  SSF    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED        13.  14.   5.   4.   7.   6.   6.  13.  25.  24.  22.  18.  17.  27.  17.  17.
     MPH


     GT   24    :                                               1    1                   2            :     4  0.

   18 -   24    :                                               1    4    4    4         3            :    16  1.

   12 -   18    :       1    2                             1   10   40   26    5    2    1    5    7   :   100  8.

    7 -   12    :       3    1              1              8   46  130   59   10    0   10   30   15   :   313 25.

    3 -    7    :      22   18    5    3   15   18   35   45   82   90   36   17   21   62   81   14   :   564 44.

     LT    3    :       4   10   10   11   17   15   21   19   22   27   24   16   19   25   19   15   :   274 22.

      TOTAL     :      30   31   15   14   33   33   56   73  162  292  149   52   42  103  135   51   /  1271

     PERCENT    :      2.   2.   1.   1.   3.   3.   4.   6.  13.  23.  12.   4.   3.   8.  11.   4.  :      100.
                   ....................................................................................................

                            TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          41(    3.23 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                          LEVEL =200 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - D
                                                      WIND DIRECTION
                      N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED     15.   19.   5.   4.   5.   8.   8.  14.  37.  34.  23.  22.  27.  31.  23.  18.
    MPH


   GT   24     :                                           24   30                  1    9           :   64  2.

 18 -   24     :          1                                19  169   79   12    2    7    1    1 :  291  9.

 12 -   18     :    5    11                          6     65  373   99    8    2    5   30   30 :  634 19.

  7 -   12     :   21     5                3    6   47     90  261  114   31   11   65  139   67 :  860 26.

  3 -    7     :   34    14   21   16   22   43   97   88  108   88   51   73   61  119   86   49 :  970 29.

   LT    3     :   16    12   15   25   27   40   46   44   45   25   34   22   28   42   35   18 :  475 14.

    TOTAL      :   76    43   37   41   49   86  149  185  351  946  377  146  105  247  291  165 : 3294

   PERCENT     :   2.    1.   1.   1.   1.   3.   5.   6.  11.  29.  11.   4.   3.   7.   9.   5. :      100.
                ..............................................................................................

                TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        56(   1.70 %)
```

```
                              STABILITY WIND ROSE DIAGRAM

                                  C-B SHALE OIL PROJECT
                      LEVEL =200 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - E
                                                         WIND DIRECTION
                        N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED       16.  26.   5.   4.   5.   7.   7.  12.  38.  32.  23.  19.   8.  32.  14.  21.
    MPH


   GT   24     :         1                                   14   15                    5              :   35  3.

 18 -   24     :         0                                   19   64   21    2          1           2  :  109  9.

 12 -   18     :   13    7                              2    30  139   33    4          2    7     39  :  276 23.

  7 -   12     :   13    2                    1    5   14    30   44   20   16    5    24   40     47  :  261 22.

  3 -    7     :   35   11   10    4   10   32   44   23    33   26   11   24   12    40   30     17  :  362 30.

   LT    3     :   14    3   13    7   12   20   19   12    13   10    8    4    3     6    6      4  :  154 13.

    TOTAL      :   75   24   23   11   22   53   68   51   139  298   93   50   20    78   83    109  : 1197

   PERCENT     :   6.   2.   2.   1.   2.   4.   6.   4.   12.  25.   8.   4.   2.    7.   7.     9.  :      100.
                 .............................................................................................

                   TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        31(   2.59 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                     C-B SHALE OIL PROJECT
                          LEVEL =200 FEET  PERIOD(12/ 1/76 TO 12/31/76)

STABILITY CLASS - TOTAL
                                                    WIND DIRECTION
                      N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED     16,   26,   6,   5,   7,   8,   8,  14,  38,  34,  23,  22,  27,  32,  23,  21,
    MPH


   GT   24    :            1                                  39   46                   1   16            :  103  1,

  18 -  24    :            1                                  39  237  104   18    2   11    1    3 :  416  6,

  12 -  18    :  23   26                               9  106  553  159   18    4    8   45   77 : 1028 14,

   7 -  12    :  60   13              2    4   12   76  207  469  205   62   17  103  211  135 : 1576 22,

   3 -   7    : 148   79   54   34   63  120  211  229  376  350  136  128  115  249  220  107 : 2619 36,

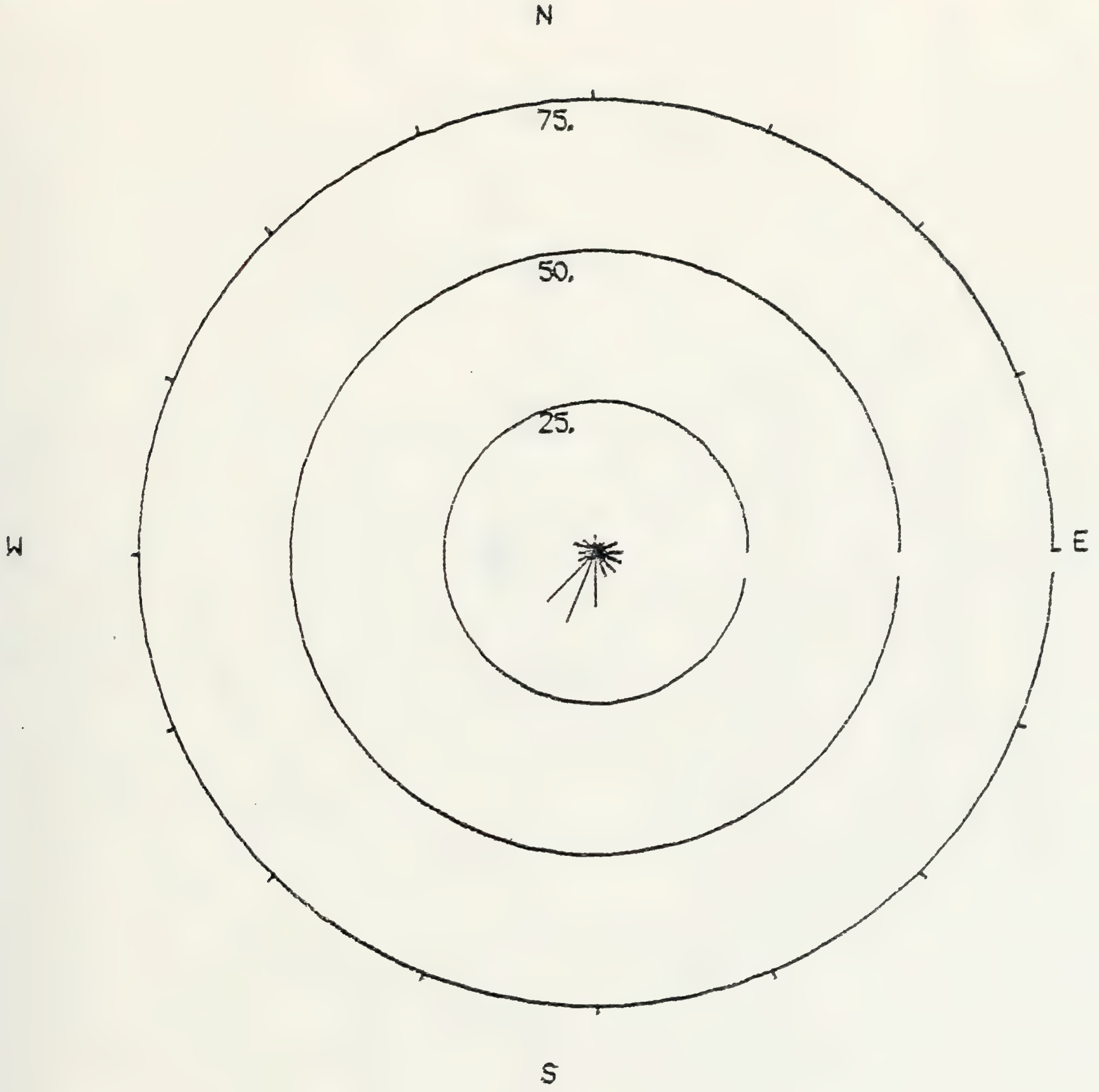
   LT    3    :  58   54   66   67   83  104  143  128  151  107   97   74   81  105   85   58 : 1461 20,

    TOTAL     : 289  174  120  101  148  228  366  442  918 1762  701  300  220  492  562  380 / 7203

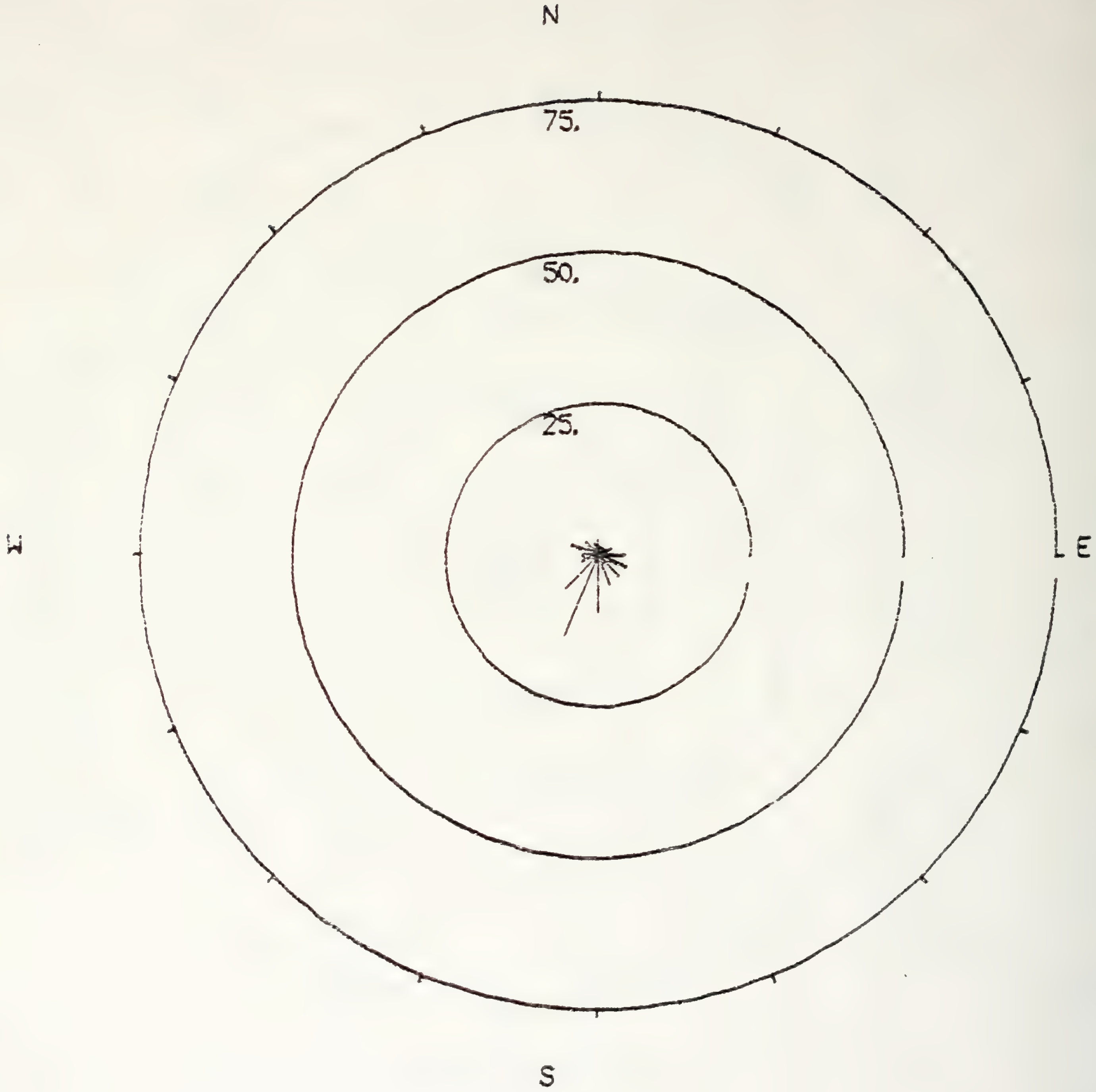
   PERCENT    :   4,   2,   2,   1,   2,   3,   5,   6,  13,  24,  10,   4,   3,   7,   8,   5, :      100,
                ..........................................................................................

                    TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        269(   3,73 %)

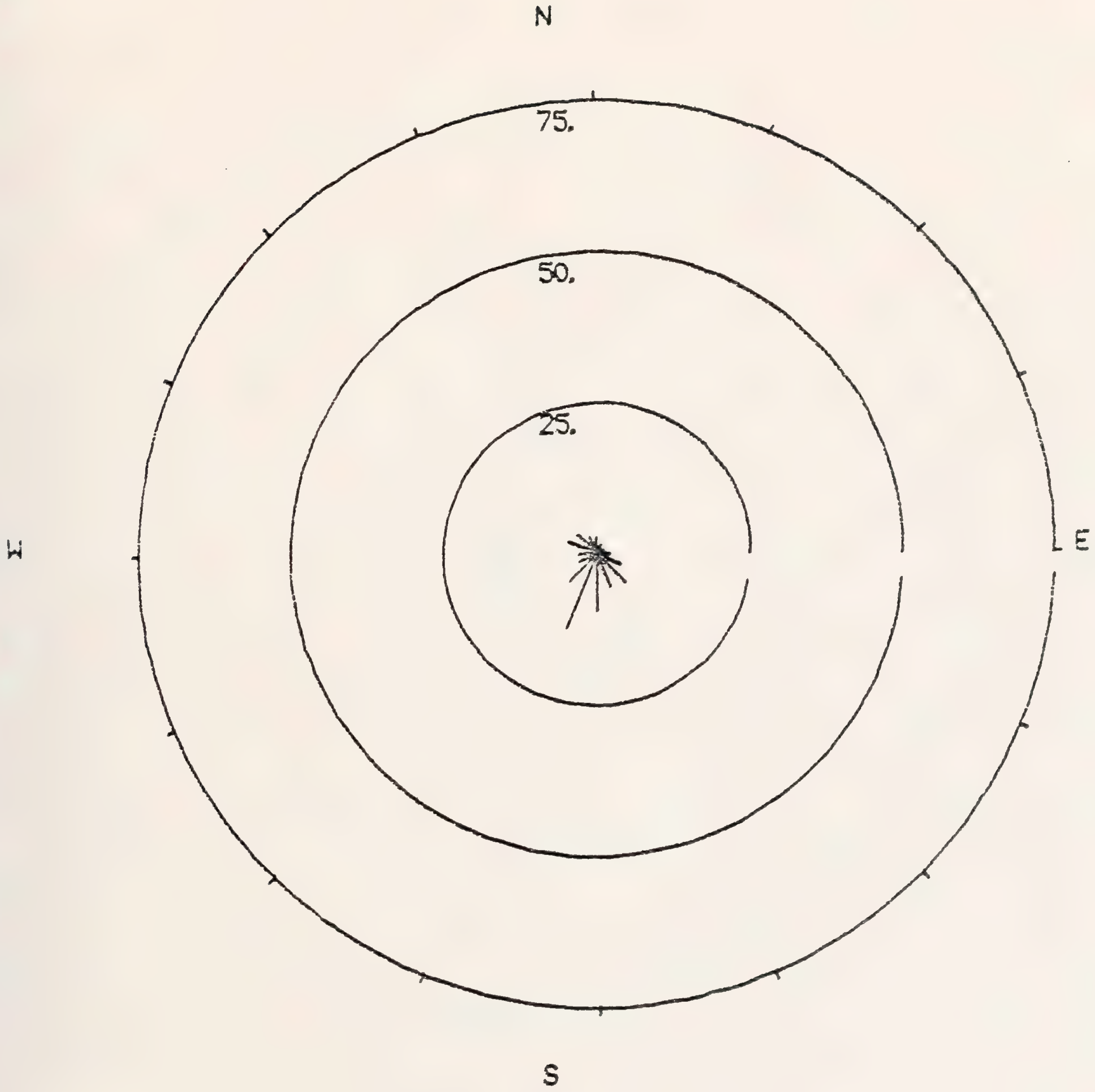

                           PERCENTAGE OF A     STABILITY -  13,04 %
                           PERCENTAGE OF B     STABILITY -   6,53 %
                           PERCENTAGE OF C     STABILITY -  17,65 %
                           PERCENTAGE OF D     STABILITY -  45,73 %
                           PERCENTAGE OF E     STABILITY -  16,62 %
```



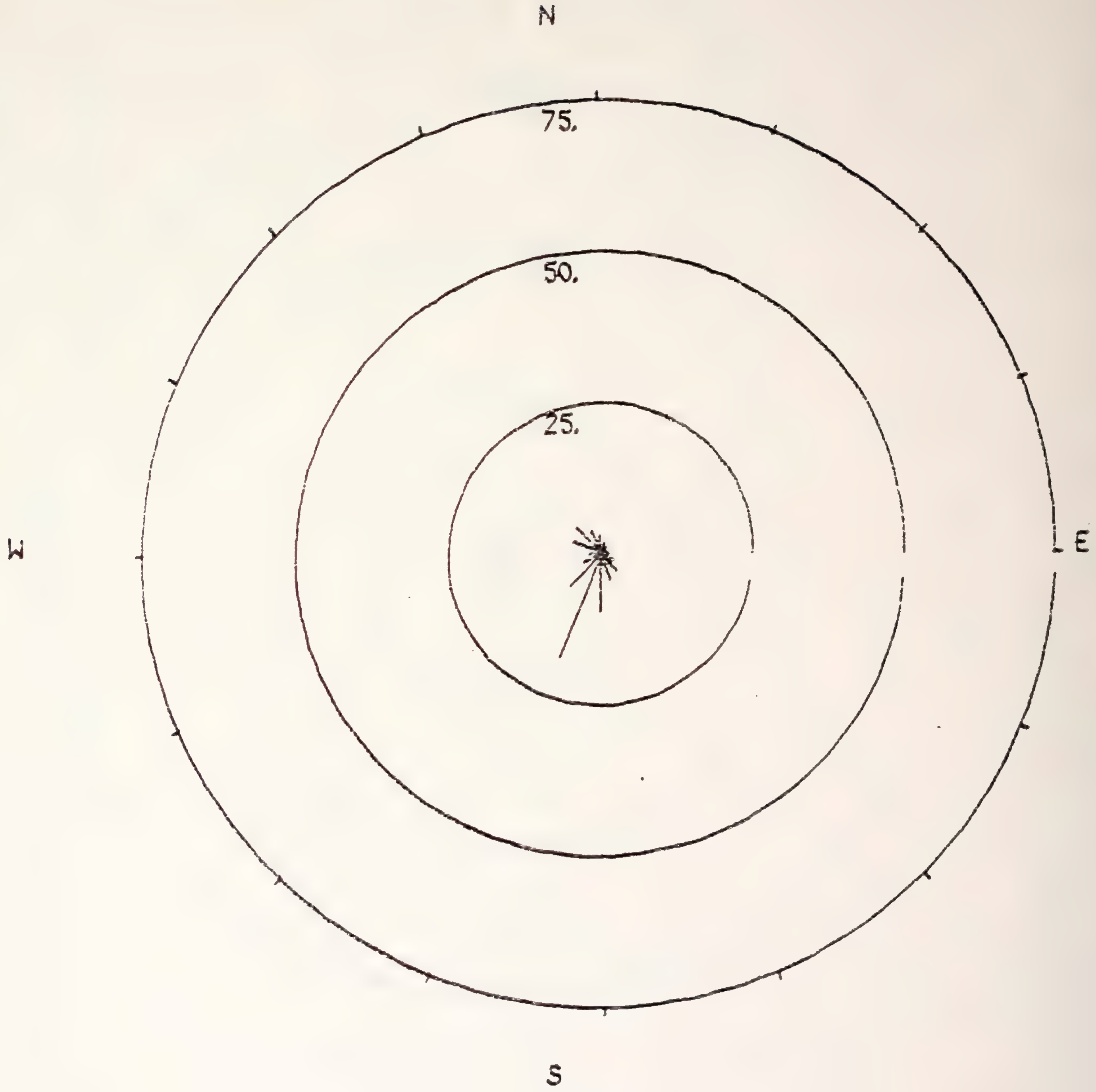
PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 8 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 30 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 100 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 200 FOOT LEVEL

RADIAN REPORT -

RADIAN
CORPORATION

DCN 77-100-056-04

AIR MONITORING REPORT
FOR
C-b SHALE OIL PROJECT
JANUARY 1977
Report No. 29

13 April 1977

Presented to:
C-b Shale Oil Project
United Bank Tower
Denver, Colorado 80202

Prepared by:
Radian Staff

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Pyranometer ---------- -674
Hydrogen Sulfide ---------- -674
Total Hydrocarbons ---------- -675
Methane ---------- -675
Non-Methane Hydrocarbons ---------- -675
Carbon Monoxide ---------- -676
Ozone ---------- -676
Barometric Pressure ---------- -676
Total Precipitation ---------- -677
Particulate ---------- -677
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Nitric Oxide (NO) ---------- -684
Nitrogen Dioxide (NO_2) ---------- -685
Sulfur Dioxide (SO_2) ---------- -686
Pyranometer ---------- -687
Hydrogen Sulfide ---------- -688
Total Hydrocarbons ---------- -689
Methane ---------- -690
Non-Methane Hydrocarbons ---------- -691
Carbon Monoxide ---------- -692
Ozone ---------- -693

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Nitrogen Dioxide---------- -723
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Total Hydrocarbons---------- -726
Methane---------- -727
Non-Methane Hydrocarbons---------- -728
Carbon Monoxide---------- -729
Ozone---------- -730
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30 feet---------- -733
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8 feet---------- -736
30 feet---------- -737
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200 feet---------------------------------- -764

Vertical Bi-Vane Wind Direction

30 feet---------------------------------- -765
100 feet---------------------------------- -766
200 feet---------------------------------- -767
Nitrogen Oxides---------------------------- -768
Nitric Oxide------------------------------- -769
Nitrogen Dioxide--------------------------- -770
Sulfur Dioxide----------------------------- -771
Hydrogen Sulfide--------------------------- -772
Total Hydrocarbons------------------------- -773
Methane------------------------------------ -774
Non-Methane Hydrocarbons------------------- -775
Carbon Monoxide---------------------------- -776
Ozone-------------------------------------- -777
Hourly Total Precipitation----------------- -778

Wind Speed

8 feet---------------------------------- -779
30 feet---------------------------------- -780
100 feet---------------------------------- -781
200 feet---------------------------------- -782

Wind Direction

8 feet---------------------------------- -783
30 feet---------------------------------- -784
100 feet---------------------------------- -785
200 feet---------------------------------- -786

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Relative Humidity
8 feet---------------------------------- II B-787
30 feet---------------------------------- -788
100 feet---------------------------------- -789
200 feet---------------------------------- -790
Temperature
8 feet---------------------------------- -791
30 feet---------------------------------- -792
100 feet---------------------------------- -793
200 feet---------------------------------- -794
Barometric Pressure------------------------ -796
Solar Radiation---------------------------- -795
Bi-Vane Wind Speed
30 feet---------------------------------- -797
100 feet---------------------------------- -798
200 feet---------------------------------- -799
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30 feet---------------------------------- -800
100 feet---------------------------------- -801
200 feet---------------------------------- -802
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Class Total-------- -839

30-foot level - Stability Class A------------ -840
Class B------------ -841
Class C------------ -842
Class D------------ -843
Class E------------ -844
Class Total-------- -845

100-foot level - Stability Class A------------ -846
Class B------------ -847
Class C------------ -848
Class D------------ -849
Class E------------ -850
Class Total-------- -851

200-foot level - Stability Class A------------ -852
Class B------------ -853
Class C------------ -854
Class D------------ -855
Class E------------ -856
Class Total-------- -857

Percentage of Occurrence of Wind Direction
8-foot level--------------------------- -858
30-foot level--------------------------- -859
100-foot level--------------------------- -860
200-foot level--------------------------- -861

I. GENERAL DESCRIPTION OF AIR MONITORING PROGRAM

Radian Corporation, under contract to the C-b Oil Shale Project, is performing the data compilation and reporting of air quality and meteorological data at one monitoring site in Northwest Colorado. The site measures and records concentrations of particulates, sulfur dioxide, oxides of nitrogen, hydrogen sulfide, total hydrocarbons, methane, and carbon monoxide. A 200-foot meteorological tower provides wind direction, wind speed, temperature, and relative humidity data at four levels (8, 30, 100, and 200 feet). Other meteorological variables measured at the tower site are insolation, barometric pressure, and precipitation.

Figure I shows the configuration of the monitoring station. The station provides a sturdy and protective covering for the monitoring equipment.

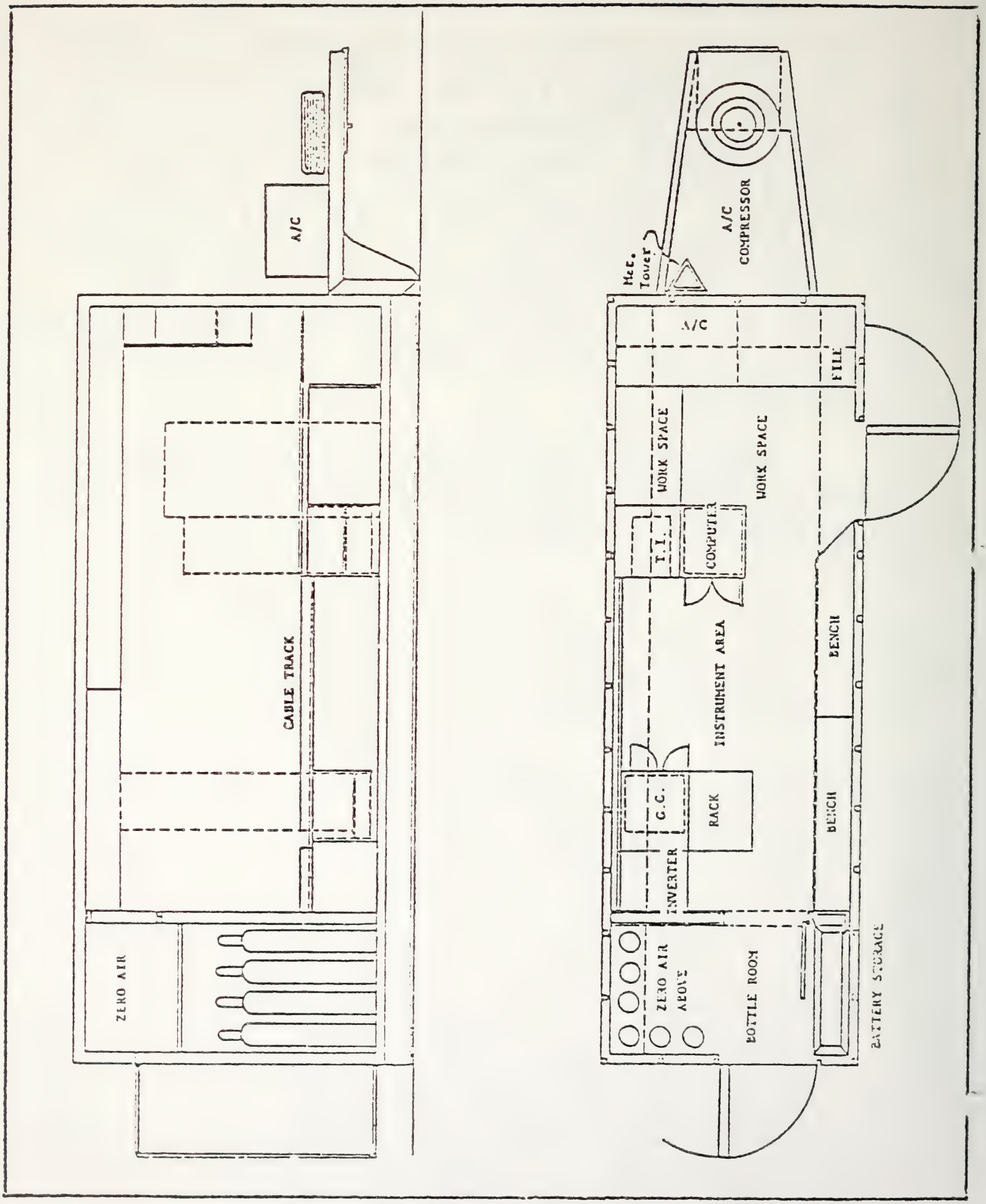
A/C
CABLE TRACK
ZERO AIR
Met. Tower
A/C COMPRESSOR
A/C
FILE
WORK SPACE
WORK SPACE
T.I.
COMPUTER
INSTRUMENT AREA
BENCH
G.C.
RACK
BENCH
INVERTER
ZERO AIR ABOVE
BOTTLE ROOM
BATTERY STORAGE

FIGURE I

II. DESCRIPTION OF INSTRUMENT SYSTEMS

A. Air Quality Instrumentation

Nitrogen oxides are measured with a Meloy Model NA520 analyzer. This dual-channel analyzer is based on the chemiluminescent principle and continuously monitors both NO_x and NO. A subtraction circuit in the instrument provides a continuous NO_2 output, but is not used in Radian's system. NO_2 is calculated once a second by the computer by subtracting the NO value from the NO_x value, thus avoiding any drift which might occur in the NO_2 output of the instrument. This instrument has a minimum detectable sensitivity of 5 ppb (parts per billion), and a linearity of ±1%.

Both sulfur dioxide and hydrogen sulfide are measured with Meloy Model SA185 sulfur analyzers. The hydrogen sulfide analyzer uses a Meloy Model NO_x-1 sulfur dioxide scrubber and the sulfur dioxide analyzer uses a Meloy Model H_2S-1 hydrogen sulfide scrubber. The Model SA185 is a continuous analyzer and utilizes the flame photometric principle of operation. The minimum detectable sensitivity is 5 ppb and the linearity of ±1%.

Ozone is measured with a Meloy Model OA350 analyzer. This instrument provides continuous measurement of ozone and is based on the chemiluminescent principle. The minimum detectable sensitivity is 0.5 ppb and the linearity is ±1%.

Total hydrocarbons, methane, and carbon monoxide are monitored with a Bendix Model 8200 gas chromatograph analyzer. This instrument uses a plume ionization detector and has a minimum detectable sensitivity of 5 ppb for all three components. The Model 8200 works on a five-minute cycle, i.e., one air sample is analyzed every five minutes, and the result is displayed for five minutes via a sample and hold circuit.

The air sample is drawn in through a glass cane and manifold supplied by the Ace Glass Company. The system has a 25mm diameter, and a constant air flow through the system is provided by an air pump rated at 60 cfm at 0" head pressure. The manifold has sampling ports to which 1/4" teflon lines to the instrument are connected. All joints in the sampling system are secured by O-ring compression fittings. The manifold is contained in a heated (100°F) chamber to prevent condensation of moisture. The teflon lines from the manifold to the instruments are insulated with 1/8" wall thickness rubber tubing.

The trailer has four heavy duty high volume particulate samplers (Hi-Vols). Fiberglass filter paper is used for collection of particulate samples and each filter is brought to a controlled humidity before weighing. Each Hi-Vol has a flow recorded to permit correction for changes in air flow as the filter becomes loaded with particulates. Each Hi-Vol runs for a 24-hour period (midnight to midnight) and is turned on and off by the computer. The Hi-Vols were designed following guidelines recommended by the Environmental Protection Agency and were manufactured by Radian.

In addition to the normal Hi-Vol particulate samples, a duplicate Hi-Vol sample is collected every sixth day on special filter paper for trace element analysis. Once each quarter these samples are composited and analyzed for gross radioactivity and trace element content.

B. Calibration Procedures

The trailer contains a Meloy Model RAD-1 calibration unit. This instrument provides a zero air supply, SO_2 span gas from an SO_2 permeation tube, and NO span gas obtained by precisely diluting bottled NO span gas. The calibration of all instruments is automatically performed once a day and is controlled by the computer. Each instrument is first switched to zero; the computer monitors the output of each channel and takes a new zero reading after a stable zero signal has been reached. This zero reading is compared by the computer to the zero reading obtained 24 hours before, and if a drift in excess of 10 ppb has occurred, an excess zero drift light for the channel in question is turned on on the System Status Panel. Next, span gas is supplied to each channel and the computer decides when a stable span value has been reached. This value is recorded and compared to the previous day's value. An excess span drift light on the System Status Panel is turned on if a drift exceeding 10 ppb occurs. The instruments are then returned to the monitor mode and after two minutes the computer resumes data taking.

The bottled NO gas used at each site was obtained from Precision Gas Products. Pre-purified grade hydrogen is used in the SO_2 analyzers.

The SO_2 permeation tubes were manufactured by Metronics Association, Inc. Their output has been verified by comparison to the output of National Bureau of Standards tube 10-42. Both SA185 analyzers in each trailer are calibrated with the SO_2 from the permeation tube. This instrument responds to the number of sulfur atoms per molecule; thus, SO_2 can be used to calibrate both the H_2S and SO_2 monitors.

The Model OA350 ozone analyzer has its own calibration system which provides a zero check and a span check. The ozone calibration system is verified by comparison to a calibrated ozone generator maintained in Radian's laboratory in Rifle.

The Model 8200 total hydrocarbon, methane, and carbon monoxide analyzer is calibrated with undiluted span gas obtained from AirCo's Rare and Specialty Gas Division. This span gas contains methane and carbon monoxide in air, the methane being used to calibrate both the total hydrocarbon channel and the methane channel. The Model 8200 is zeroed with air from a Bendix Model 8834 zero air unit. In addition, the instrument is electronically re-zeroed at the start of every five-minute cycle.

The Hi-Vol particulate samplers were calibrated using a Calibration Kit from General Metal Works.

C. Data Acquisition System

The basis of the data acquisition system is a Data General NOVA 1200 minicomputer. The NOVA, which has a basic cycle time of 1.2 μsec, is equipped with automatic program load and power fail/automatic restart features. The computer utilizes 16K 16-bit words of core memory. Analog-to-digital conversion is accomplished via an ADC built by Radian Corporation. The input/output unit for the system is Texas Instrument's KSR 733 keyboard/printer. This model teletype provides keyboard entry and hard copy printed output. The data are also recorded on a cassette magnetic tape unit with three drives. The cassette unit is utilized for program storage and loading as well as recording. To reduce wear on mechanical parts, the power to the teletype and cassette units is turned on only when the unit(s) is (are) to be used. Several important functions in the instruments as well as in the computer and the trailer are monitored by means of lights on a System Status Panel. These data lights are written onto cassette tape to monitor the complete status of the system every five minutes. The Data Acquisition System also monitors the presence of 100V power from the power lines. In its absence, the computer, which is powered by batteries, switches all trailer

systems to battery-provided power. If the line voltage is restored before the batteries are discharged to a specified level, the trailer system is switched back to line power.

D. Meteorological Instrumentation

200-Foot Meteorological Tower

The tower has instrumentation at four levels: 8 feet, 30 feet, 100 feet, and 200 feet. At all four levels, there are: wind speed, wind direction, and temperature and relative humidity sensors in a power-aspirated radiation shield. Temperature difference thermistors (also in power-aspirated radiation shields) and their associated circuitry take lapse rate measurements for the 30-foot to 100-foot layer and the 30-foot to 200-foot layer. In addition, this site has a Precision Spectral Pyranometer, a barometer, and a tipping bucket rain/snow gage.

The wind direction and speed apparatus used at each measurement level of the tower is the Model 1074-2 wind sensor by Meteorological Research, Inc. (MRI). This sensor has a 540° potentiometer for wind direction and a light chopper for wind speed. This sensor is rugged, with an all-weather coaxial cup and damped vane assembly. The prototype model has been in operation for years under the most demanding weather conditions, performing continuously with the utmost reliability. All of the wind sensors on the tower have been specially treated with a black paint which will promote warming of the exposed surfaces of the sensor and thereby reduce ice and snow accumulations on the moving parts of the apparatus. The specifications on the Model 1074-2 are as follows:

Wind Speed

- Starting Threshold: 0.75 mph.
- Response Distance: 18 feet (63% recovery).
- Flow Coefficient: 7.9 feet/Revolution.
- Accuracy: ±0.4 mph or 1% (whichever is greater).

Wind Direction

- Starting Threshold: 0.75 mph.
- Delay Distance: 4 feet (50% recovery).
- Damping Ratio: 0.5 to 0.6.
- Accuracy (540° system): ±1%.
- Range: 0° to 540°.

The relative humidity and temperature sensors are mounted within a power-aspirated radiation shield at each tower level. All aspirators and sensors are of the Model 840 Series by MRI. The aspirated shielded housing is designed to provide maximum radiation protection to the sensor. Ambient air is drawn into the shield and across the sensors at approximately 15 feet per second. This intake air is essentially sampled from a hemispherical space which is approximately 3-inch radius from the tube opening. Speed of the incoming air at the periphery of this hemisphere is approximately 1 mph.

The temperature sensor is comprised of a dual thermistor and resistor network. This circuit provides a linear resistance change with an air temperature change. The relative humidity sensor is placed alongside the temperature elements inside the shield where it is exposed to a constant flow of air. Circulation to both sides of the sensing element produces accurate monitoring with a good response time. The specifications on the sensing elements are as follows:

Temperature

- Accuracy: ±0.25°C.
- Range: -50°C to +50°C.

Humidity

- Accuracy: ±3.0% RH.
- Range: 0% to 100% Relative Humidity.

Measurements of temperature difference are taken for two layers, the 30-foot to 100-foot and the 30-foot to 200-foot layer. The thermistors and circuitry used for these measurements are separate from the thermistors measuring air temperature. The use of separate thermistors and circuitry to measure ΔT allows for much greater accuracy and resolution in the measurements, which is necessary for stability assessments. Two ΔT thermistors are at the 30-foot level, one is at the 100-foot level, and one is at the 200-foot level. All of these ΔT thermistors are mounted within power-aspirated radiation shields. The specifications on the ΔT instrumentation are as follows:

- Accuracy: ±0.1°C.
- Range of T Circuit (Lower Level-Upper Level): +9F° to -9F°.

All instrumentation, except at the ground level, is mounted at the end of 12-foot retractable booms. These booms are 3-inch box beams which are on rollers and can be retracted to the instrument platforms for instrument maintenance.

The meteorological tower itself is a 200-foot Rohn Model 80 Guyed Tower, designed for 40 pounds per square foot wind load with ½" of radial ice per EIA Standard RS-222-B, to

support four levels of meteorological equipment. The material consists of tower sections with a tapered base, three retractable booms 12-feet long, three outside work platforms, an inside ladder for climbing, two base ground kits and one anchor ground kit. The cable-type Safety Climbing Device consists of a cable and attachment mechanisms with a locking sleeve and safety belt. The tower is lighted and painted according to FAA specifications.

The signals from the tower instrumentation are fed from multiple signal cables into transmitters mounted at the base of the tower. After signals have been converted to analog signals, they are fed into a junction box, also at the tower base, where they are assimilated into one coaxial cable. The signals are then run underground within 3" PVC conduit to the A-to-D assembly, where they are processed. The transmitters are shielded and insulated from the elements. The signal cable is run underground in PVC conduit in order to minimize damage from the weather or various rodents in the region.

The auxiliary equipment at the tower site consists of a heated tipping bucket rain/snow gage, an analog barometer, and a Precision Spectral Pyranometer. The rain/snow gage is the Model P511-E unit by Weather Measure. In the case of this gage, the durability and reliability of a tipping bucket gage are combined with heavy-duty electric heaters to make this an all-purpose precipitation sensor. This gage may be used to measure snowfall and rainfall. An insulating cover of poly-vinyl chloride and a thermostatic control insure the proper gage temperature. The thermostatic control is adjustable from 0 to 35°C. Snow falling into the inlet funnel is melted. The resulting water (from rain or snow) drains into a precision tipping bucket mechanism which activates a mercury switch each time the bucket fills and tips. The gage is constructed of durable corrosion-resistant materials to provide many years of service. The

specifications for this gage are as follows:

- Orifice: 8 inches.
- Calibration: 0.01 inch.
- Accuracy: 0.5% (Calibrated at 0.5 in/hr).
- Sensor: Chrome-plated tipping buckets.
- Switch: Mercury, 0.1-second closure.
- Heat Control: Thermostat adjustment, 0 to 35°C.

The barometer is the B242 Analog Output Barometer by Weather Measure. This barometer provides an output voltage that is linearly proportional to pressure. The specifications on this instrument, which is mounted inside the monitoring trailer at the site, are as follows:

- Range: Specially designed for the 100 millibar interval from 725 millibars to 825 millibars.
- Resolution: Infinite.
- Linearity: ±0.5 millibar, over the 100 millibar interval.

The pyranometer at the site is the Eppley Precision Spectral Pyranometer. This instrument is used for the measurement of sun and sky radiation totally or in defined wavelength bands. The pyranometer is levelled and mounted atop a wooden stand 4½ feet from the ground surface. Care has been taken to eliminate the effects from all outside influences, such as reflection or shadows, on the pyranometer. The instrument characteristics are as follows:

- Sensitivity: 5 mv. per cal/cm°/min.
- Independence: 300 ohms.
- Temperature dependence: Sensitivity constant to within ±1 percent over the ambient temperature range from -20 to +40°C.

- Linearity: Response linear up to intensities of 4 cal/cm^2/min.
- Response time: 1 second (i/e signal).

All instrumentation is factory-calibrated and is field-calibrated at various intervals. Sling psychrometers are used to calibrate the humidity sensors, known temperatures and/or resistances are used to calibrate the thermistors, and an rpm calibrating unit is used to calibrate the anemometers. The wind direction instrumentation is aligned to true north (reference direction) by means of a surveyor's transit.

III. MICROMETEOROLOGICAL AND TERRAIN FEATURES

The Piceance Creek Valley and C-b Shale Oil Tract are situated such that many microscale meteorological phenomena affect the region where the ambient air monitoring unit is located. Trailer 023 and its associated 200-foot meteorological tower are located atop a plateau to the south of the valley, high enough to be affected mostly by gradient flow conditions.

The elevation at the meteorological tower site (Trailer 023) is 6940 feet above sea level. The largest gradients in elevation in this area, of course, occur at the Piceance Creek Valley walls. However, the northern valley walls are slightly steeper than those at the southern boundary of the valley, which then slopes upward gradually toward the C-b Tract. The Piceance Creek Valley decreases in elevation from east to west in this area, so that nighttime katabatic cold-air drainage flows advect from east to west.

Site 023 is approximately 2.5 miles south of the Piceance Creek Valley. This location is relatively high compared to its surroundings, with the nearest points having elevations greater than 7000 feet being .5 miles to the south of the tower. The tower itself is on the top of a small knoll located between Scandard and Sorghum Gulches. Because of its location and the irregularities of the surrounding terrain, meteorological patterns are varied here.

Wind instrumentation is mounted at four levels of the meteorological tower: 8 feet, 30 feet, 100 feet, and 200 feet. The top level of the tower generally remains in gradient wind flow. That is, the winds at that level are normally generated

by synoptic-scale features and are usually separated from terrain features and micrometeorological circulations. Occasionally, a weak anabatic flow influence is experienced. However, such is not the case with the three lowest measurement levels. To varying degrees, these levels are influenced by both the katabatic and anabatic circulation cells. However, when strong pressure gradient forces exist in the region and the synoptic-scale wind flow is strong, all four tower levels will reflect a gradient wind flow, with the winds increasing in strength with increasing height.

The terrain atop the plateau is generally barren and fairly rugged, with a few scattered small trees. The topsoil dries rapidly and is very fine, resulting in blowing dust when dry, windy conditions exist. In the Piceance Creek Valley, the terrain is fairly grassy and flat, with steep valley walls on either side. Surface winds are normally rather light in this valley unless channelling effects occur.

During clear nights with rather light pressure gradient-induced winds, rapid radiational cooling will occur in the region because of the barren nature of the terrain and the generally dry character of the air in this portion of the country. As a result, the diurnal range of temperatures will be extremely large. Because of the katabatic flow in the valley, nighttime temperatures will generally be lower in the valley than on the plateau. During the winter, especially, temperatures in the valley may be 20F° lower than they are on the plateau during the early morning hours.

IV. OPERATING TIME ANALYSIS FOR EACH SITE

This section presents the operating statistics for each of the major subsystems contained in the monitoring station. Table I shows the specific number of hours that each of these subsystems was inoperative for the month. The column labeled "DIGITIZING SYSTEM" indicates the entire data acquisition system; therefore, downtime hours appearing in this column means total loss of data. These instances include, in addition to computer downtime, power failures, no power available, and self-automated shutdown periods such as during air conditioner malfunctions.

Calibration time is not considered to be downtime and is, therefore, not included in the downtime figures. The amount of time used in calibrating the instruments is given at the bottom of the downtime analysis table and is reported as total calibration hours for each channel for the entire month. As is evident in the calibration figures, channels can be calibrated independently of one another. No calibration time is given for particulate monitoring since Hi-Vol calibration occurs infrequently and only during the off-duty cycle for each Hi-Vol while another Hi-Vol is taking data.

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TABLE I.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 023

DATE	DIGITIZING SYSTEM	NOX	NO	SO2	WS	WD	RH	TOUT	PYR	H2S	VOLT	THC	CH4	CO	O3	PRES	RAIN	PART
1/ 1	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	23.	0.	0.	24.	0.	0.	0.	0.
1/ 2	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	21.	0.	0.	24.	0.	0.	0.	0.
1/ 3	0.	2.	2.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	24.	0.	0.	0.	0.
1/ 4	0.	9.	9.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	24.	0.	0.	0.	0.
1/ 5	0.	13.	13.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	24.	0.	0.	0.	0.
1/ 6	0.	1.	1.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	24.	0.	0.	0.	0.
1/ 7	0.	9.	9.	0.	0.	0.	24.	0.	0.	5.	20.	5.	0.	24.	0.	0.	0.	0.
1/ 8	0.	5.	5.	0.	0.	0.	24.	0.	0.	24.	20.	24.	0.	24.	0.	0.	0.	0.
1/ 9	2.	14.	14.	0.	0.	0.	22.	0.	0.	9.	18.	22.	0.	22.	0.	0.	0.	24.
1/10	0.	24.	24.	0.	0.	0.	24.	0.	0.	0.	20.	24.	0.	24.	0.	0.	0.	24.
1/11	0.	23.	23.	0.	0.	0.	24.	0.	0.	0.	20.	13.	0.	23.	0.	0.	0.	0.
1/12	1.	23.	23.	0.	0.	0.	23.	0.	0.	0.	19.	0.	0.	23.	0.	0.	0.	0.
1/13	0.	23.	23.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	13.	0.	0.	0.	0.
1/14	2.	14.	14.	0.	0.	0.	22.	0.	0.	0.	19.	0.	0.	0.	0.	0.	0.	0.
1/15	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/16	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/17	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	7.	7.	7.	0.	0.	0.	0.
1/18	1.	13.	13.	0.	0.	0.	23.	0.	0.	0.	19.	19.	19.	19.	0.	0.	0.	0.
1/19	0.	15.	15.	0.	0.	0.	24.	0.	0.	0.	20.	14.	14.	14.	0.	0.	0.	0.
1/20	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/21	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/22	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/23	0.	23.	23.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/24	0.	10.	10.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/25	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/26	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/27	0.	8.	8.	0.	0.	0.	24.	0.	0.	0.	22.	0.	0.	0.	0.	0.	0.	24.
1/28	0.	12.	11.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/29	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/30	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
1/31	0.	13.	13.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
CAL TIME		14.	14.	14.	0.	0.	0.	0.	0.	14.	0.	10.	10.	10.	11.	0.	0.	

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TABLE I.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 023

DATE	DIGITIZING SYSTEM	WS1	WD1	RH1	TMP1	WS2	WD2	RH2	TMP2	WS3	WD3	RH3	TMP3	WS4	WD4	RH4	TMP4	DT1	DT2
1/ 1	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.
1/ 2	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.
1/ 3	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.
1/ 4	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 5	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 6	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 7	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 8	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 9	2.	0.	0.	0.	1.	0.	0.	22.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/10	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/11	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/12	1.	0.	0.	0.	0.	0.	0.	23.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/13	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/14	2.	0.	0.	0.	0.	0.	0.	22.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/15	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/16	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/17	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/18	1.	0.	0.	0.	0.	0.	0.	23.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/19	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/20	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/21	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/22	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/23	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/24	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/25	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/26	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/27	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/28	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/29	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/30	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/31	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAL TIME		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TABLE I.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 023

DATE	BWS1	HWD1	VWD1	BWS2	HWD2	VWD2	BWS3	HWD3	VWD3	WSD1	WSD2	WSD3	WSD4	HSD1	VSD1	HSD2	VSD2	HSD3	VSD3
1/ 1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
1/ 4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
1/ 5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	0.	0.	0.
1/ 6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
1/ 7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/ 8	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	2.	0.	0.	0.	0.	0.
1/ 9	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	0.	1.	0.	1.	0.
1/10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/11	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	1.	0.	1.	0.
1/12	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
1/13	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.
1/14	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	1.	0.	1.	0.	1.	0.
1/15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.
1/17	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
1/18	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	0.	0.	0.	0.	1.	0.
1/19	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.	0.	1.	0.	2.	0.
1/20	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.	0.	1.	0.	1.	0.
1/21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.	0.	0.	1.	0.	0.	0.
1/22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/23	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	2.	2.	0.	1.	0.	1.	0.
1/24	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	0.	2.	0.	2.	0.
1/25	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.
1/26	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/27	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1/28	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	2.	0.	1.	0.	0.	0.
1/29	0.	0.	0.	0.	1.	0.	0.	0.	0.	3.	2.	3.	2.	2.	0.	3.	0.	1.	0.
1/30	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	1.	0.	2.	0.	2.	0.
1/31	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAL TIME	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

V. MONTHLY METEOROLOGICAL SUMMARY

A. Summary of the Meteorological Conditions in North America during January 1977

January 1977 brought colder than normal temperatures to all sections of the United States except for the West Coast. Monthly precipitation totals were mostly below normal west of the Continental Divide. East of the Continental Divide, monthly precipitation totals were normal or slightly above normal. An exception occurred along the Atlantic Seaboard and in the central portions of the country, where precipitation totals were slightly below normal and below normal, respectively. The long wave circulatory pattern for January featured a mean ridge in the western United States and a well developed long wave trough in the eastern United States. The ridge in the West accounted for the below normal precipitation in that section of the country. The trough in the East accounted for the extremely cold temperatures in that portion of the country.

The long wave circulation was meridional (north-south) on the 3rd, 4th, and the 8th through the 20th. Split flow occurred on the 1st, 2nd, from 5th through the 7th, and from the 21st through the 31st.

Extratropical low pressure systems were frequent in the United States during January because of the strength of the polar front jet stream. Numerous low pressure systems developed during the month, affecting primarily the Great Lakes. The dates of occurrence and locations of these low pressure systems are as follows:

2nd: Pacific Northwest
3rd: Great Basin
4th: Great Plains, Central Rockies
6th: Northern Great Lakes
7th: Northern Great Plains, Atlantic Seaboard
9th: Gulf Coast
10th: Great Lakes
15th: Great Lakes
16th: New England
24th: Northern Great Lakes
25th: Atlantic Seaboard
26th: Northern Great Lakes, New England
27th: Northern Great Lakes
28th: Great Lakes
29th: New England

On a sectional basis, the following temperature and precipitation anomalies existed during January:

Section	Temperature	Precipitation
Northeast	Much below normal	Variable; mostly slightly above normal
Atlantic Seaboard	Very much below normal	Slightly below normal
North Central	Very much below normal	Variable; mostly slightly below normal
Central	Very much below normal	Below normal
Southeast	Very much below normal	Near normal
Southwest	Much below normal	Variable; mostly slightly above normal
Rockies	Below normal	Variable; mostly below normal
West and Pacific Northwest	Near normal	Below normal

B. Summary of the Meteorological Conditions in Northwestern and West Central Colorado during January 1977

Grand Junction, Colorado, sixty miles to the south-southwest of the Tract C-b, received a total of 0.37 inch of precipitation during January, which is 0.27 inch below the monthly normal of 0.64 inch. Grand Junction received 4.2 inches of snow during January. Measurable precipitation occurred on the 3rd, 5th, 8th, 16th, 22nd, and the 23rd. The region received 78 percent of the possible monthly sunshine. Sky cover by cloudiness averaged 5.5 out of a possible 10 during the daylight hours and 4.7 out of a possible 10 during the entire month. The region had eleven clear days, seven partly cloudy days, and thirteen cloudy days during the month.

Air mass changes were infrequent during January. Only two frontal passages occurred during January. These frontal passages occurred early in the month, when some upper-level troughing dominated the Tract C-b. During the last half of January, an upper-level ridge dominated the Tract C-b and no frontal passages occurred. Temperatures in the Tract C-b were cool due to seasonal influences. Transport winds over the region as a whole were approximately the same in January as they were in December. A maritime polar cold frontal passage occurred on the 3rd and a continental polar cold frontal passage occurred on the 8th.

C. Summary of the Meteorological Conditions in the Oil Shale Tract C-b Region during January 1977

An upper-level ridge which had a mean position over the western United States was responsible for the below normal precipitation totals which occurred in the Tract C-b region during January. The ridging pattern was broken by a short-lived troughing pattern which occurred in the area during the first half of January. Four of the six days on which precipitation occurred were during the first half of January. These days were the 3rd, 5th, 8th, and 16th. Precipitation also occurred on the 22nd and 23rd in association with the passage of a minor trough. Temperatures in the Tract C-b region were below normal during January; however, most of the extremely cold continental polar air masses were directed toward the eastern half of the United States during the month.

One maritime polar cold frontal passage and one continental polar cold frontal passage occurred during January. The continental polar front of the 8th was the colder of these two fronts.

The monthly average temperatures recorded at the meteorological tower during January were: 23.5°F at 8 feet; 22.6°F at 30 feet; 22.8°F at 100 feet; and 21.3°F at 200 feet. These averages are approximately 4F° lower than those recorded in December. The warmest days of the month were the 18th through the 22nd. The coolest days were the 5th through the 10th. The highest temperature recorded at the meteorological tower during January was 47°F at the 8-foot level on the 18th and 21st. The coldest temperature recorded at the meteorological tower was -6°F at the 200-foot level on the morning of the 9th.

Monthly average relative humidities during January were much higher than they had been in December in the Tract C-b region. This increase can be attributed to both a decrease in monthly average temperatures and an increase in the average moisture content of the air during January. At the meteorological tower, the monthly average relative humidities were: 73.9 percent at 8 feet; 76.0 percent at 100 feet; and 70.3 percent at 200 feet. These relative humidities correspond to dew points of 17°F, 16.5°F, and 12.5°F, respectively. The relative humidity sensor at the 30-foot level was inoperative for most of the month. The most humid days of the month were the 5th, 22nd, and 23rd. The driest days were the 10th, 11th, 12th, 21st, 29th, 30th, and 31st.

Winds on the meteorological tower during January were slightly stronger on the average than the winds that prevailed during December. Resultant wind vectors at the meteorological tower during January were: 190.0 degrees at 2.2 miles per hour at 8 feet; 189.6 degrees at 3.2 miles per hour at 30 feet; 193.4 degrees at 4.1 miles per hour at 100 feet; and 203.7 degrees at 5.1 miles per hour at 200 feet.

The scalar average wind speeds associated with these resultant wind vectors were 4, 5, 6, and 7 miles per hour, respectively. The Ekman spiral and Ekman effect, i.e., a veering in direction and increase in speed as a function of increasing height above the surface, were in evidence during most of January. A reference to the January wind roses for the meteorological tower indicates that the winds at that location were primarily south-southwesterly at all four levels, with a relatively high frequency of occurrence of southerly winds in addition.

The windiest days of the month at the meteorological tower were the 1st, 2nd, and 3rd. The days having the lightest winds were the 5th, 14th, and 30th. The highest five-minute average wind speed recorded at the tower during January was 33 miles per hour at the 200-foot level on the 3rd.

Precipitation totals in the Tract C-b Monitoring Network during January were generally very much below normal. Only 0.06 inch of precipitation was recorded at the meteorological tower during January. The largest daily precipitation total recorded in the network during January was 0.06 inch on January 3rd. The greatest five-minute precipitation total recorded during the month was 0.02 inch (a precipitation rate of 0.24 inch/hour), recorded on the 3rd. Measurable precipitation (≥.01 inch) was recorded at the meteorological tower on only one day during the month. This precipitation, on the 3rd, was in the form of snow.

The monthly average station pressure during January was 788.1 millibars at the meteorological tower. This reading is 2.4 millibars lower than the December average station pressure of 790.5 millibars. The highest daily average station pressures occurred from the 16th through the 20th. The lowest daily average station pressures occured on the 3rd and the 8th.

Cloudiness increased slightly in the Tract C-b region during January, compared to the December cloud cover and insolation statistics (although January insolation totals exceeded December insolation totals). The region received an insolation total of 6037.8 langleys, which is equivalent to a daily average insolation total of 195 langleys/day. This average is slightly below the normal for January of 230 langleys/day in the Tract C-b region. On a diurnal basis, the greatest solar radiation rates occurred between 1200 and 1300 hours. The greatest daily radiation totals were received from the 24th through the 31st. The lowest daily solar radiation totals were received on the 3rd, 5th, 16th, 22nd, and 23rd. The greatest five-minute radiation total received during January was 5.60 langleys (a rate of 1.12 langleys/minute), which occurred on the 25th. The largest hourly insolation total received during January was 66 langleys, which occurred on the 25th between 1100 and 1200 hours.

The insolation totals on the 25th are unusually high for a day during the month of January. However, the 25th was a clear day in the Tract C-b. Hence, the transmissivity of sunlight was very high through a relatively thin atmosphere which contained little water vapor. Therefore, the high insolation totals on the 25th can be justified.

Because of the progressively increasing solar elevations and the increasingly longer periods of daylight that prevailed during January, the total possible solar radiation which could be received during a day increased monotonically throughout the month.

The slight increase in insolation which affected the Tract C-b during January caused the unstable stability classes to become more common than they had been in December. Using the Pasquill method of stability determination, "C" stability (slightly unstable) was the most common stability, occurring during 151 daytime hours, or 52.8 percent of the time. In decreasing order of frequency, "D" (neutral) stability occurred during 96 hours, or 33.6 percent of the time, and "B" (very unstable) stability occurred during 38 hours, or 13.3 percent of the time. "A" (extremely unstable) stability occurred during only one daytime hour.

Using the lapse rate method of stability determination $\left(\frac{dT}{dZ}\right)$, the neutral ("D"), slightly stable ("E"), and extremely stable ("F") stability classes were the most prevalent during January. In general, stable and/or neutral conditions prevailed during the nighttime hours and unstable and/or neutral conditions prevailed during the day. The following table is a diurnal breakdown of the various stability classes. As one proceeds from "A" to "F", the stability class ranges from extremely unstable to extremely stable. The column labeled "number of occurrences" indicates the number of times a particular stability class occurred during the month on an hourly basis. Level I presents the temperature change versus height values $\left(\frac{dT}{dZ}\right)$ that were considered between 30 feet and 100 feet. Level II indicates the values that were considered between 30 feet and 200 feet.

Using the standard deviation of the horizontal wind (σ_Θ) method of stability determination, "D" stability was the most common stability classification at the meteorological tower because of the moderately strong winds that normally occurred at that location. The stability distributions for the 30-, 100-, and 200-foot levels were similar. The 8-foot level of the tower exhibited higher percentages of the unstable classes because of excessive mechanical turbulence.

The bivanes at the 100- and 200-foot levels of the meteorological tower indicated a pattern of upward vertical motion (negative vertical directions) during the month, while the 30-foot level indicated a pattern of downward vertical motion during January. Upward vertical motion was more pronounced during the nighttime hours at the 100-foot level during January (probably because of lower wind speeds), but this diurnal pattern was reversed (i.e., upward motions were less pronounced) at the 200-foot tower level. At the 30-foot level, downward vertical motions were greatest during the daytime hours, a result which is quite unusual considering the proximity of the sensing level to the ground.

The σ_Θ values obtained at the 30-, 100-, and 200-foot levels using the bivanes compared favorably with the σ_Θ values obtained at those levels using the standard wind instrumentation.

LEVEL I $(\frac{dT}{dZ})$ 30 feet to 100 feet

Stability Class /Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Occurrences
A:	0	0	0	0	0	0	0	0	0	2	8	19	14	7	6	4	1	0	0	0	0	0	0	0	61
B:	0	0	0	0	0	0	0	0	0	3	7	4	10	17	16	14	4	0	0	0	0	0	0	0	75
C:	0	0	0	0	0	0	0	0	0	5	5	2	2	1	2	6	7	0	0	0	0	0	0	0	30
D:	4	3	3	4	5	5	5	3	6	8	8	6	5	6	6	7	18	17	7	6	5	3	3	4	147
E:	6	7	7	5	4	3	5	7	7	9	1	0	0	0	0	0	1	13	15	13	9	12	7	7	138
F:	21	21	20	22	22	23	21	21	18	4	0	0	0	0	0	0	0	1	9	12	17	16	21	20	289

A: extremely unstable
B: very unstable
C: slightly unstable
D: neutral
E: slightly stable
F: extremely stable

LEVEL II $(\frac{dT}{dZ})$ 30 feet to 200 feet

Stability Class /Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Occurrences
A:	3	1	1	1	2	1	2	2	3	10	17	21	14	8	7	5	10	9	3	5	3	2	1	2	133
B:	2	1	2	4	2	3	2	2	2	2	5	4	10	16	16	19	15	9	3	3	4	4	4	3	137
C:	2	3	3	1	1	1	1	1	2	3	2	1	2	1	2	2	5	3	5	3	2	1	1	2	50
D:	7	9	4	7	5	9	7	6	8	9	5	5	5	6	5	5	1	8	10	9	8	8	5	4	155
E:	14	10	12	11	16	11	12	10	9	6	0	0	0	0	0	0	0	2	9	6	11	14	18	17	188
F:	3	7	8	7	5	6	7	10	7	1	0	0	0	0	0	0	0	0	1	5	3	2	2	3	77

VI. DATA PRESENTATION AND SUMMARY

This section includes summaries for various recorded data at the monitoring sites. The data presentations indicate the variability of pollutant concentrations and meteorological parameters with location and time. In addition, the presentations indicate the functional dependence of pollutant concentration with wind direction. All data except suspended particulates (24-hour samples) are sampled once each second, but recorded as five-minute arithmetic averages of the one-second samples. This averaging technique tends to smooth instantaneous maximum values, and is especially evident when comparing wind gusts to local weather bureau data.

Inherent to any data acquisition system is random noise both from the recording instruments and quantization in the analog-to-digital conversion. The lower threshold for all analytical instruments is twice the maximum noise level generated by the instruments. This lower threshold is 5 ppb for all instruments, except for the ozone analyzer, for which it is 0.5 ppb. Therefore, any values appearing in the data presentations that are less than 5 ppb indicate only a trace of pollutant in question and should not be construed to be absolute levels. In addition, the recorded quantity is simply random noise and averages tend toward zero. Thus, when concentrations are below the lower threshold of the analytical instruments they may appear as a zero entry in the data presentation which does not indicate absolute zero concentration.

All pollutant data (except for particulate data) is taken at the monitoring site in integer parts per billion (ppb) but is presented here in micrograms per cubic meter ($\mu g/m^3$)

assuming standard temperature and pressure of 25°C and 760 mmHg (1013.2 millibars), respectively. The scale factors required to convert μg/m³ at standard conditions back to ppb for the various pollutants are given in the following table.

POLLUTANT	TO CONVERT μg/m³ AT 25°C AND 760 mmHg TO ppb MULTIPLY BY
NO_x	.534
NO	.534
NO_2	.534
SO_2	.384
H_2S	.723
THC	1.536
CH_4	1.536
CO	.877
O_3	.512

The units of the meteorological parameters are given in the table. It should be noted here that inside temperature is monitored and recorded as a functional part of the system but is not presented in this report.

Table III displays the monthly statistics for each monitoring station for the month. To insure statistical significance, and to reduce the possibility of introducing a bias in the presentation, averages are computed only when at least 50 percent of the samples are present, except for relative humidity and temperature, in which case 75 percent of the samples is required. If less than the required samples are present for a particular parameter, that entry will be blank. The number of

samples present for a particular channel is defined as the total possible number of five-minute samples for the averaging time less the computer downtime less the channel downtime less the channel calibration time. The averages in Table III are arithmetic averages with the following exceptions:

- Wind speed and wind direction are computed using a vector averaging technique where the wind speed is treated as the vector magnitude.
- Particulate averages are computed as the geometric mean.

Table IV displays the daily averages. Again, 50 percent of the five-minute samples are required in order to compute an average except for the cases of relative humidity and temperature which require 75 percent. A blank entry indicates an insufficien number of five-minute samples present for that day. Wind speed, wind direction, and particulate averages are computed the same way as described in Table III.

Table V presents the maximum daily five-minute average retained in the data base as well as the time of occurrence. A five-minute maximum average is printed if any samples are present for that day. Therefore, the maximum five-minute average for a channel which experienced considerable downtime or calibration time during the day in question may be misrepresentative of the maximum expected for that channel on that day.

Table VI indicates the five largest averages for various averaging times. The table shows the period of time covered by the average. Maxima are chosen so that time segments

are independent. The maximum averages reported are found using a 'sliding average' technique with the exception of the 24-hour particulate average, which is computed from midnight to midnight. For averaging times less than or equal to three hours, the sliding average is stepped one five-minute sample at a time. For longer averaging times the step size is twelve samples or one hour. For averaging times less than or equal to one hour 100 percent of the five-minute samples must be present to compute an average. Averaging times greater than one hour require 90 percent. Whether or not a sliding average is computed is solely determined by the number of samples present in that averaging time and is independent of daily and monthly averaging criteria.

To demonstrate the functional dependence of recorded parameters upon wind direction, Table VII shows pollutant concentration displayed in a bi-variate distribution with wind direction. The tables display the total number of five-minute samples occurring in each concentration and wind speed class. The mean concentration for all samples occurring in each wind class are also shown. This distribution demonstrates the dependence of high pollutant concentrations upon wind direction. Appendix A shows the stability wind rose diagrams.

The wind speed classifications used in Appendix A are based on the Beaufort wind scale classification system. This is a system of estimating and reporting wind speeds, invented in the early nineteenth century by Admiral Beaufort of the British Navy. It was originally based on the effects of various wind speeds on the amount of canvas that a full-rigged frigate of the period could carry, but has since been modified and modernized. In its present form for international meteorological use it equates: (a) Beaufort force (or Beaufort number); (b) wind speed;

(c) descriptive terms; and (d) visible effects upon land objects or the sea surface. One land adaptation is the NRM wind scale.

The six basic wind speed classifications used in the report are: 1-3 knots, 4-6 knots, 7-10 knots, 11-16 knots, 17-21 knots, and winds of greater than 21 knots. The following table is a complete description of the Beaufort Wind Scale, taken from Physical Climatology, by Helmut Landsberg, 1969.

BEAUFORT WIND SCALE FOR OBSERVATIONS AT LAND STATIONS

Force	Explanatory Title	Specification for Use	Corresponding Limits of Wind Speed at 10 meters ab.grd.				
			Mi/hr.	Knots	Km/hr.	M/sec.	Ft/sec.
0	Calm	Smoke rises vertically	<1	<1	<1	0.3	1
1	Light air	Direction of wind shown by smoke drift, but not by wind vanes	1-3	1-3	1-5	0.3-1.5	1-5
2	Light breeze	Wind felt on face:leaves rustle:ordinary vane moved by wind	4-7	4-6	6-11	1.6-3.3	6-11
3	Gentle breeze	Leaves and small twigs in constant motion;wind extends light flat	8-12	7-10	12-19	3.4-5.4	12-1[illegible]
4	Moderate breeze	Raises dust and loose paper:small branches are moved	13-18	11-16	20-28	5.5-7.9	19-26
5	Fresh breeze	Small trees in leaf begin to sway:wavelets formed on inland waters	19-24	17-21	29-38	8.0-10.7	27-35
6	Strong breeze	Large branches in motion:whistling heard in telegraph wires:umbrellas used with difficulty	25-31	22-27	39-49	10.8-13.8	36-45
7	High wind	Whole trees in motion:inconvenience felt when walking against wind	32-38	28-33	50-61	13.9-17.1	46-56
8	Fresh gale	Breaks twigs off trees:generally impedes progress	39-46	34-40	62-74	17.2-20.7	57-68
9	Strong gale	Slight structural damage occurs (chimney pots and slates removed)	47-54	41-47	75-88	20.8-24.4	69-80
10	Whole gale	Seldom experienced inland:trees uprooted: considerable structural damage occurs	55-63	48-55	89-102	24.5-28.4	81-93
11	Storm	Very rarely experiences:accompanied by widespread damage	64-72	56-63	103-117	28.5-32.6	94-106
12	Hurricane		73-82	64-71	118-133	32.7-36.9	107-121
13			83-92	72-80	134-149	37.0-41.4	122-136
14			93-102	81-89	150-166	41.5-46.1	137-151
15			104-114	90-99	167-183	46.2-50.9	152-166
16			115-125	100-108	184-201	51.0-56.0	167-183
17			126-136	109-118	202-220	56.1-61.2	184-201

Source: Table 36 (p.119) in R.J. List (1951):Smithsonian Meteorological Tables:Smithsonian Miscell.Coll.Vol. 114.

Table VIII demonstrates the diurnal variation of various recorded parameters. Hourly averages are determined by arithmetically averaging five-minute samples, except for wind direction averages which are computed vectorially assuming unit vector magnitudes. Totals in the diurnal wind direction tables are vector averages of the columns and rows. For all parameters, a blank entry in the diurnal variation table indicates that less than half (i.e., less than 6) of the five-minute samples for that hour are present.

All times given in the data presentation are Mountain Standard Time.

To facilitate comparison of recorded concentrations to ambient air quality standards, the following regulations are presented.

TABLE II

FEDERAL AND COLORADO STANDARDS

	Primary	Secondary	Non-Designated Area	Designated Area		
				1973	1976	1980
Particulate						
Annual G. M.	75 $\mu g/m^3$	60 $\mu g/m^3$	45 $\mu g/m^3$	70 $\mu g/m^3$	55 $\mu g/m^3$	45 $\mu g/m^3$
24 Hr. Max.*	260	150	150	200	180	150
Sulfur Oxides						
Annual	80(.03ppm)		--	60(.02ppm)	25(.009ppm)	10(.004ppm)
24 Hr. Max.*	365(.14ppm)		15(.005ppm)	300(.1ppm)	150(.05ppm)	55(.02ppm)
3 Hr. Max.*	--	1300(.5ppm)	--	--	--	--
1 Hr. Max.**	--	--	--	800(.28ppm)	300(.1ppm)	--
Oxidant						
1 Hr. Max.*	160(.08ppm)	160				
8 Hr. Max.*	--	--				
Annual	--	--				
Hydrocarbons						
3 Hr. Max.* 6-9 a.m.	160(.24ppm)	160				
Carbon Monoxide						
Max. 8 Hrs.*	10000(9ppm)	10000				
Max. 1 Hr.*	40000(35ppm)	40000				
Nitrogen Dioxide						
Annual	100(.05ppm)	100				

Units are micrograms per cubic meter and ppm in parenthesis.

*Not to be exceeded more than once per year.

**Not to be exceeded more than once per month.

TABLE III
AVERAGES FOR JANUARY 1 THRU 31

```
                    TABLE III. AVERAGES FOR JAN   1 THRU 31
     (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
          TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
          PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

      NITROGEN OXIDES(NOX)              NITRIC OXIDE(NO)              NITROGEN DIOXIDE(NO2)

SITE    023                             023                           023
         .8                              .3                            .5
-----------------------------------------------------------------------------------------

      SULFUR DIOXIDE(SO2)               PYRANOMETER                   HYDROGEN SULFIDE

SITE    023                             023                           023
        1.7                          6037.6                            .4
-----------------------------------------------------------------------------------------

      TOTAL HYDROCARBONS                METHANE                       NON-METHANE HYDROCARBONS

SITE    023                             023                           023
     1061.3                           872.3                         196.8
-----------------------------------------------------------------------------------------

       CARBON MONOXIDE                  OZONE                         BAROMETRIC PRESSURE

SITE    023                             023                           023
      326.5                            70.3                         768.1
-----------------------------------------------------------------------------------------

      TOTAL PRECIPITATION               PARTICULATE

SITE    023                             023
        .06                             3.3
-----------------------------------------------------------------------------------------
```

```
                    TABLE III. AVERAGES FOR JAN    1 THRU 31
      (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
           TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
           PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                       WIND SPEED

SITE 023
    (  8-FT)             ( 30-FT)             (100-FT)             (200-FT)
     2.2                  3.2                  4.1                  5.1
-------------------------------------------------------------------------------------------

                                     WIND DIRECTION

SITE 023
    (  8-FT)             ( 30-FT)             (100-FT)             (200-FT)
    190.0                189.6                193.4                203.7
-------------------------------------------------------------------------------------------

                                    RELATIVE HUMIDITY

SITE 023
    (  8-FT)             ( 30-FT)             (100-FT)             (200-FT)
     73.9                                      76.0                 70.3
-------------------------------------------------------------------------------------------

                                       TEMPERATURE

SITE 023
    (  8-FT)             ( 30-FT)             (100-FT)             (200-FT)
     23.5                 22.6                 22.8                 21.3
-------------------------------------------------------------------------------------------
```

TABLE IV
DAILY AVERAGES FOR JANUARY 1 THRU 31

RADIAN
CORPORATION

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                     TABLE IV, DAILY AVERAGES FOR JAN    1 THRU 31
      (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

         NITROGEN OXIDES(NOX)            NITRIC OXIDE(NO)               NITROGEN DIOXIDE(NO2)

     SITE   023                          023                            023
DATE
-----------------------------------------------------------------------------------------------
 1/ 1         .7                          .0                             .7
 1/ 2         .1                          .0                             .1
 1/ 3         .0                          .0                             .0
 1/ 4         .5                          .4                             .1
 1/ 5
 1/ 6        2.7                          .4                            2.4
 1/ 7        6.9                         2.9                            4.1
 1/ 8        4.0                         3.7                             .3
 1/ 9
 1/10
-----------------------------------------------------------------------------------------------
 1/11
 1/12
 1/13
 1/14
 1/15         .0                          .0                             .0
 1/16         .0                          .0                             .0
 1/17         .0                          .0                             .0
 1/18
 1/19
 1/20         .0                          .0                             .0
-----------------------------------------------------------------------------------------------
 1/21         .0                          .0                             .0
 1/22         .0                          .0                             .0
 1/23
 1/24         .1                          .0                             .1
 1/25        1.0                          .0                             .9
 1/26         .5                          .2                             .3
 1/27        1.3                          .1                            1.2
 1/28                                     .0
 1/29         .1                          .0                             .1
 1/30         .9                          .0                             .9
-----------------------------------------------------------------------------------------------
 1/31
```

```
                         TABLE IV, DAILY AVERAGES FOR JAN    1 THRU 31
         (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

        SULFUR DIOXIDE(SO2)                 PYRANOMETER                    HYDROGEN SULFIDE

    SITE   023                          023                            023
DATE
--------------------------------------------------------------------------------------------------
 1/ 1       .0                        165.4                           2.4
 1/ 2       .0                        181.5                           3.4
 1/ 3       .0                         59.5                           1.9
 1/ 4       .5                        153.0                            .1
 1/ 5       .0                         53.2                            .0
 1/ 6       .0                        106.5                            .0
 1/ 7       .0                        184.6                            .1
 1/ 8       .0                        111.3
 1/ 9       .5                        245.8                            .0
 1/10      1.2                        125.4                            .0
--------------------------------------------------------------------------------------------------
 1/11       .7                        230.2                            .0
 1/12       .0                        203.5                            .0
 1/13       .0                        159.6                            .1
 1/14       .0                        206.1                            .2
 1/15       .0                        225.6                            .3
 1/16       .0                         89.5                            .2
 1/17       .0                        175.1                            .2
 1/18       .6                        213.4                            .0
 1/19       .7                        240.4                            .1
 1/20      3.8                        234.9                            .8
--------------------------------------------------------------------------------------------------
 1/21      6.1                        183.1                            .4
 1/22      4.5                         60.9                            .0
 1/23      9.8                         65.0                            .0
 1/24      7.8                        288.7                            .0
 1/25      9.9                        376.3                            .3
 1/26      5.2                        281.8                            .0
 1/27       .2                        288.8                            .0
 1/28       .2                        283.9                            .0
 1/29       .0                        280.9                            .0
 1/30       .0                        283.5                            .0
--------------------------------------------------------------------------------------------------
 1/31       .0                        271.9                            .0
```

TABLE IV. DAILY AVERAGES FOR JAN 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	TOTAL HYDROCARBONS	METHANE	NON-METHANE HYDROCARBONS
SITE	023	023	023
DATE			
1/ 1	1057.4	914.3	143.1
1/ 2	1049.7	920.5	129.2
1/ 3	1031.2	910.1	121.1
1/ 4	1041.1	924.4	116.7
1/ 5	1084.3	942.5	141.7
1/ 6	1356.2	945.2	411.0
1/ 7	1430.3	930.2	497.3
1/ 8		930.6	
1/ 9		939.3	
1/10		916.6	
1/11		904.8	
1/12	1021.0	891.7	129.3
1/13	1067.9	918.6	149.3
1/14	1073.7	909.3	164.3
1/15	1058.8	907.6	151.2
1/16	1064.1	907.6	156.5
1/17	1136.7	891.4	237.2
1/18			
1/19			
1/20	991.0	900.8	90.2
1/21	988.7	882.3	106.5
1/22	1025.6	890.0	135.5
1/23	1049.0	887.3	161.7
1/24	1035.5	855.4	181.8
1/25	1018.9	822.9	195.0
1/26	956.6	791.8	164.8
1/27	855.7	778.1	77.6
1/28	967.9	782.7	185.1
1/29	1099.6	758.5	341.1
1/30	1113.7	705.5	408.2
1/31	1093.1	642.1	451.0

TABLE IV, DAILY AVERAGES FOR JAN 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	CARBON MONOXIDE	OZONE	BAROMETRIC PRESSURE
SITE	023	023	023
DATE			
1/ 1		74.1	781.3
1/ 2		69.5	782.9
1/ 3		69.0	776.6
1/ 4		64.0	781.9
1/ 5		59.4	783.3
1/ 6		69.1	790.2
1/ 7		75.2	786.7
1/ 8		66.9	779.8
1/ 9		70.8	786.1
1/10		77.7	786.9
1/11		76.9	789.7
1/12		76.8	786.6
1/13		78.2	785.8
1/14	346.3	75.6	788.0
1/15	339.9	82.0	789.4
1/16	296.2	72.3	793.1
1/17	334.2	71.9	796.9
1/18		66.7	796.6
1/19		69.7	793.7
1/20	324.9	71.1	792.7
1/21	295.3	74.5	791.0
1/22	331.3	62.3	789.6
1/23	330.2	50.[illegible]	790.2
1/24	317.2	62.0	792.0
1/25	255.9	71.7	789.9
1/26	286.3	72.1	786.6
1/27	437.9	68.9	785.7
1/28	247.2	67.8	788.2
1/29	243.2	68.6	788.0
1/30	498.0	68.8	790.8
1/31	378.2	73.5	790.7

```
                         TABLE IV, DAILY AVERAGES FOR JAN    1 THRU 31
       (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
            TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
            PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

        TOTAL PRECIPITATION              PARTICULATE

    SITE   023                           023
DATE
------------------------------------------------------------------------------------------------
 1/ 1                                     5.0
 1/ 2                                     1.0
 1/ 3          .06                        8.0
 1/ 4                                     3.0
 1/ 5                                     1.0
 1/ 6                                     2.0
 1/ 7                                     3.0
 1/ 8                                     2.0
 1/ 9
 1/10
------------------------------------------------------------------------------------------------
 1/11                                     2.0
 1/12                                     1.0
 1/13                                     2.0
 1/14                                     3.0
 1/15                                     1.0
 1/16                                     3.0
 1/17                                     3.0
 1/18                                     2.0
 1/19                                     1.0
 1/20                                     5.0
------------------------------------------------------------------------------------------------
 1/21                                     6.0
 1/22                                    22.0
 1/23                                     5.0
 1/24                                     7.0
 1/25                                     7.0
 1/26                                     5.0
 1/27
 1/28                                     5.0
 1/29                                     9.0
 1/30                                     7.0
------------------------------------------------------------------------------------------------
 1/31                                     5.0
```

TABLE IV, DAILY AVERAGES FOR JAN 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

WIND SPEED

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
1/ 1	7.7	10.4	13.2	16.0
1/ 2	10.7	14.2	17.3	20.1
1/ 3	7.7	10.5	12.5	14.1
1/ 4	2.4	3.8	5.2	6.1
1/ 5	.9	1.7	2.1	2.4
1/ 6	1.2	1.9	2.2	2.6
1/ 7	4.0	5.9	7.9	9.4
1/ 8	2.4	3.3	3.7	4.3
1/ 9	2.1	2.8	3.4	4.1
1/10	5.4	7.7	10.1	12.5
1/11	1.1	1.9	2.6	3.7
1/12	3.4	4.9	5.6	8.2
1/13	.4	1.0	1.2	1.4
1/14	.4	.6	1.0	1.8
1/15	4.9	7.3	9.5	10.8
1/16	1.8	3.1	3.8	4.4
1/17	1.1	2.0	2.7	3.2
1/18	2.2	3.0	3.6	4.7
1/19	.3	.7	.9	1.1
1/20	1.2	2.2	2.6	3.1
1/21	1.8	2.9	3.4	3.7
1/22	.8	1.5	2.2	2.8
1/23	1.2	2.6	3.1	3.2
1/24	.1	1.3	.6	1.7
1/25	1.8	2.8	3.7	4.5
1/26	3.8	5.4	7.2	9.4
1/27	2.6	3.9	5.3	7.5
1/28	1.3	2.0	3.2	4.9
1/29	.4	.4	.8	.9
1/30	.1	.3	.3	.8
1/31	1.7	3.0	3.7	4.2

TABLE IV. DAILY AVERAGES FOR JAN 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

WIND DIRECTION

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
1/ 1	198.1	199.0	202.7	207.6
1/ 2	193.5	194.6	198.8	203.9
1/ 3	178.3	180.5	184.2	189.0
1/ 4	233.9	231.8	237.2	240.9
1/ 5	274.1	265.8	282.0	292.3
1/ 6	194.7	182.5	175.3	184.5
1/ 7	177.7	176.3	179.8	188.1
1/ 8	295.0	290.5	300.0	304.7
1/ 9	188.7	189.5	191.8	203.3
1/10	177.7	178.4	184.9	194.9
1/11	153.2	152.6	162.1	187.5
1/12	183.7	183.6	190.5	200.4
1/13	168.0	157.2	175.1	195.1
1/14	247.8	226.2	210.9	205.0
1/15	180.3	181.1	184.7	195.0
1/16	185.7	186.7	196.8	215.4
1/17	120.7	131.2	144.9	166.4
1/18	187.9	185.5	188.9	198.7
1/19	179.9	170.3	160.7	207.2
1/20	159.6	169.7	172.2	190.0
1/21	193.6	185.2	185.4	194.4
1/22	161.1	172.0	174.1	180.3
1/23	307.3	306.4	312.1	318.5
1/24	90.1	325.6	91.1	222.8
1/25	190.2	181.8	188.3	208.0
1/26	185.4	181.7	191.4	201.7
1/27	191.1	188.4	198.3	208.2
1/28	228.9	213.8	216.5	225.4
1/29	16.0	31.2	53.9	357.9
1/30	48.4	108.1	134.3	194.6
1/31	159.8	160.0	166.5	184.5

TABLE IV, DAILY AVERAGES FOR JAN 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

RELATIVE HUMIDITY

SITE 223

DATE	(6-FT)	(30-FT)	(100-FT)	(200-FT)
1/ 1	72.8		77.9	
1/ 2	70.0		75.7	
1/ 3	77.3		82.3	
1/ 4	82.7		85.4	74.6
1/ 5	95.6		100.0	92.7
1/ 6	88.0		92.5	82.0
1/ 7	80.0		83.3	69.1
1/ 8	80.6		92.5	79.7
1/ 9	78.7		85.1	80.1
1/10	61.5		62.9	55.3
1/11	58.1		57.4	50.6
1/12	51.6		51.2	45.4
1/13	66.2		67.2	63.8
1/14	78.0		78.7	74.8
1/15	70.5		70.9	66.5
1/16	80.0		80.2	76.1
1/17	75.6		72.5	66.2
1/18	74.4		70.6	66.6
1/19	70.9		68.1	64.0
1/20	70.0		67.0	62.9
1/21	64.8		58.0	55.4
1/22	91.2		93.1	90.3
1/23	99.8		100.0	99.5
1/24	88.3		90.6	87.3
1/25	79.1		82.9	79.4
1/26	73.2		78.7	74.7
1/27	75.8		82.4	79.5
1/28	65.9		69.4	64.8
1/29	55.8		59.2	55.2
1/30	57.2		61.0	56.8
1/31	54.3		57.8	54.5

TABLE IV. DAILY AVERAGES FOR JAN 1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

TEMPERATURE

SITE 023

DATE	(18-FT)	(30-FT)	(100-FT)	(200-FT)
1/ 1	26.3	24.4	24.0	22.3
1/ 2	27.3	25.0	24.2	22.6
1/ 3	28.0	26.2	25.3	23.7
1/ 4	20.6	18.9	18.7	16.8
1/ 5	12.5	10.4	10.2	8.1
1/ 6	11.7	10.7	11.3	9.2
1/ 7	15.2	13.1	13.0	11.2
1/ 8	9.8	6.8	7.0	4.7
1/ 9	5.3	2.3	2.5	-.1
1/10	15.7	13.8	13.8	12.0
1/11	19.1	18.5	19.9	19.3
1/12	24.6	23.8	23.8	22.7
1/13	22.3	21.5	21.6	19.9
1/14	18.0	17.5	17.7	16.5
1/15	23.1	22.0	22.2	20.9
1/16	23.2	22.7	22.9	21.6
1/17	26.1	28.3	28.3	27.5
1/18	33.0	33.6	34.7	33.5
1/19	32.8	33.4	33.6	32.8
1/20	32.9	33.6	33.8	33.0
1/21	34.9	35.5	36.0	34.9
1/22	30.9	30.3	30.0	28.3
1/23	27.5	26.5	25.6	24.1
1/24	22.4	22.0	22.5	21.1
1/25	22.8	22.1	23.0	21.2
1/26	23.6	22.5	22.7	21.8
1/27	25.4	24.4	24.3	23.0
1/28	27.5	27.6	28.3	27.0
1/29	26.6	27.0	27.9	26.4
1/30	23.9	24.0	24.8	23.9
1/31	31.1	31.2	31.9	30.8

TABLE V
MAXIMUM FIVE-MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JANUARY 1 THRU 31

```
        TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
      (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
             TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
             PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                  NITROGEN OXIDES(NOX)

    SITE      423
DATE
---------------------------------------------------------------------------------------------
 1/ 1        20.6(12:55)
 1/ 2         9.1( 0:55)
 1/ 3          .0( 0:00)
 1/ 4        20.6(15:20)
 1/ 5        20.6(15:05)
 1/ 6       112.3(22:25)
 1/ 7       157.3( 3:10)
 1/ 8        89.9( 4:15)
 1/ 9        18.7( 4:05)
 1/10
---------------------------------------------------------------------------------------------
 1/11
 1/12          .4(16:15)
 1/13
 1/14          .0(15:40)
 1/15          .0( 0:00)
 1/16          .0( 0:00)
 1/17          .0( 0:00)
 1/18          .0( 0:05)
 1/19         5.6(15:40)
 1/20          .0( 0:05)
---------------------------------------------------------------------------------------------
 1/21        11.2(10:25)
 1/22          .0( 0:00)
 1/23          .0( 0:00)
 1/24         5.6(19:35)
 1/25        31.8(11:30)
 1/26        15.0(10:40)
 1/27        16.9(15:10)
 1/28          .0(10:40)
 1/29         1.9(22:10)
 1/30         1.9( 0:15)
---------------------------------------------------------------------------------------------
 1/31         1.9( 0:05)
```

```
      TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN    1 THRU 31
   (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
          TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
           PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                   NITRIC OXIDE(NO)

    SITE        023
DATE
-----------------------------------------------------------------------------------------
 1/ 1          5.5(12:55)
 1/ 2           .0( 0:00)
 1/ 3           .0( 0:00)
 1/ 4         20.6(15:20)
 1/ 5          7.5(17:20)
 1/ 6         59.9(17:35)
 1/ 7         18.7(13:05)
 1/ 8         24.3( 4:10)
 1/ 9         18.7( 4:05)
 1/10
-----------------------------------------------------------------------------------------
 1/11
 1/12           .0(16:15)
 1/13
 1/14           .0(15:40)
 1/15           .0( 0:00)
 1/16           .0( 0:00)
 1/17           .0( 0:00)
 1/18           .0( 0:05)
 1/19           .0(15:25)
 1/20           .0( 0:05)
-----------------------------------------------------------------------------------------
 1/21         11.2(10:25)
 1/22           .0( 0:00)
 1/23           .0( 0:00)
 1/24           .0(10:30)
 1/25          1.9(12:55)
 1/26         15.4(10:40)
 1/27         13.1(15:35)
 1/28           .0(10:40)
 1/29           .0( 0:45)
 1/30           .0( 0:05)
-----------------------------------------------------------------------------------------
 1/31           .0( 0:00)
```

CORPORATION

```
          TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 3
        (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                      NITROGEN DIOXIDE(NO2)

     SITE       023
DATE
-----------------------------------------------------------------------------------------------
 1/ 1        20.6(13:00)
 1/ 2         9.4( 0:55)
 1/ 3          .0( 0:00)
 1/ 4         9.4(15:00)
 1/ 5        20.6(15:05)
 1/ 6       112.3(22:25)
 1/ 7       157.3( 3:10)
 1/ 8        65.5( 4:15)
 1/ 9          .0( 0:00)
 1/10
-----------------------------------------------------------------------------------------------
 1/11
 1/12          .0(16:15)
 1/13
 1/14          .0(15:40)
 1/15          .0( 0:00)
 1/16          .0( 0:00)
 1/17          .0( 0:00)
 1/18          .0( 0:05)
 1/19         5.6(15:40)
 1/20          .0( 0:05)
-----------------------------------------------------------------------------------------------
 1/21          .0( 0:05)
 1/22          .0( 0:00)
 1/23          .0( 0:00)
 1/24         5.6(19:35)
 1/25        31.8(11:30)
 1/26         1.9(16:25)
 1/27         7.5(15:10)
 1/28          .0(10:40)
 1/29         1.9(22:10)
 1/30         1.9( 0:15)
-----------------------------------------------------------------------------------------------
 1/31         1.9( 0:05)
```

```
         TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
      (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
           TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
           PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              SULFUR DIOXIDE(SO2)

     SITE        023
DATE
-----------------------------------------------------------------------------------------------
 1/ 1        2.6(22:40)
 1/ 2         .0( 0:00)
 1/ 3         .0( 0:00)
 1/ 4      145.9(15:40)
 1/ 5         .0( 0:00)
 1/ 6         .0( 0:00)
 1/ 7        2.6( 4:30)
 1/ 8         .0( 0:00)
 1/ 9        5.2(15:20)
 1/10       26.0(16:45)
-----------------------------------------------------------------------------------------------
 1/11        5.2( 4:50)
 1/12         .0( 0:00)
 1/13         .0( 0:00)
 1/14         .0( 0:00)
 1/15         .0( 0:00)
 1/16         .0( 0:00)
 1/17         .0( 0:00)
 1/18       23.4(15:35)
 1/19       15.6(20:10)
 1/20      101.5(16:05)
-----------------------------------------------------------------------------------------------
 1/21       28.7( 7:15)
 1/22       26.0( 9:45)
 1/23       28.7( 1:40)
 1/24       26.0( 4:10)
 1/25       31.3(18:45)
 1/26       31.3( 3:00)
 1/27       18.2(15:10)
 1/28       10.4( 0:35)
 1/29         .0( 0:00)
 1/30         .0( 0:05)
-----------------------------------------------------------------------------------------------
 1/31         .0( 0:00)
```

RADIAN
CORPORATION

```
     TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
          TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
          PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                        PYRANOMETER

     SITE      023
DATE
------------------------------------------------------------------------------------------
 1/ 1         3.60(12:25)
 1/ 2         3.55(11:25)
 1/ 3         1.70(14:35)
 1/ 4         4.20(13:05)
 1/ 5          .90(11:35)
 1/ 6         1.60(13:20)
 1/ 7         4.35(12:45)
 1/ 8         2.50(12:50)
 1/ 9         4.60(12:05)
 1/10         2.35( 9:50)
------------------------------------------------------------------------------------------
 1/11         3.45(11:45)
 1/12         3.90(12:25)
 1/13         4.60(11:10)
 1/14         4.95(12:00)
 1/15         3.70(13:40)
 1/16         2.80(14:10)
 1/17         3.80(11:30)
 1/18         4.20(12:35)
 1/19         3.55(12:00)
 1/20         3.90(12:55)
------------------------------------------------------------------------------------------
 1/21         3.80(13:05)
 1/22         1.15(12:40)
 1/23         2.00(12:35)
 1/24         4.90(14:10)
 1/25         5.60(11:05)
 1/26         3.85(11:55)
 1/27         3.85(12:00)
 1/28         3.95(11:35)
 1/29         3.90(11:55)
 1/30         3.90(11:55)
------------------------------------------------------------------------------------------
 1/31         3.95(12:15)
```

RADIAN
CORPORATION

```
            TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
         (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
               TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
               PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                      HYDROGEN SULFIDE

    SITE      423
DATE
------------------------------------------------------------------------------------
 1/ 1        5.5(20:15)
 1/ 2        6.9( 2:25)
 1/ 3        5.5( 0:00)
 1/ 4       30.4(15:40)
 1/ 5         .0( 0:00)
 1/ 6        1.4(12:00)
 1/ 7        2.8(18:30)
 1/ 8
 1/ 9         .0(11:25)
 1/10       11.1(16:05)
------------------------------------------------------------------------------------
 1/11         .0( 0:00)
 1/12         .0( 0:00)
 1/13        4.2(14:45)
 1/14        2.8(23:05)
 1/15        2.8( 0:00)
 1/16        1.4( 3:25)
 1/17       23.5(12:50)
 1/18         .0( 0:05)
 1/19        1.4(22:30)
 1/20        8.3(16:05)
------------------------------------------------------------------------------------
 1/21        2.8( 2:10)
 1/22         .0( 0:00)
 1/23         .0( 0:00)
 1/24        1.4(10:00)
 1/25        4.2(23:15)
 1/26        1.4(10:05)
 1/27        1.4(10:15)
 1/28         .0( 0:00)
 1/29         .0( 0:00)
 1/30         .0( 0:05)
------------------------------------------------------------------------------------
 1/31         .0( 0:00)
```

```
-      TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
    (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
           TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
           PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                               TOTAL HYDROCARBONS

     SITE      023
DATE
--------------------------------------------------------------------------------
 1/ 1      1114.9( 8:55)
 1/ 2      1107.1( 0:40)
 1/ 3      1094.1(21:25)
 1/ 4      1081.9(20:55)
 1/ 5      1243.8(23:50)
 1/ 6      3147.4(13:50)
 1/ 7      1639.8( 9:05)
 1/ 8
 1/ 9
 1/10
--------------------------------------------------------------------------------
 1/11      1113.0(18:10)
 1/12      1350.0(16:35)
 1/13      1152.7( 8:40)
 1/14      1146.8(18:00)
 1/15      1288.1(15:00)
 1/16      1636.5( 3:40)
 1/17      3249.6(14:45)
 1/18
 1/19      1044.6(20:25)
 1/20      1064.1( 1:45)
--------------------------------------------------------------------------------
 1/21      1004.8(17:15)
 1/22      1070.0(15:40)
 1/23      1113.5(14:10)
 1/24      1121.4(13:45)
 1/25      1208.7( 5:55)
 1/26      1266.0(16:20)
 1/27      1167.7(14:25)
 1/28      1101.9(15:20)
 1/29      1197.5(12:40)
 1/30      1269.2( 1:40)
--------------------------------------------------------------------------------
 1/31      1272.5(20:50)
```

```
   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
       TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
       PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                        METHANE

     SITE      023
DATE
---------------------------------------------------------------------------------------
 1/ 1       927.4( 0:55)
 1/ 2       933.2(12:15)
 1/ 3       938.4(14:25)
 1/ 4       958.8(16:40)
 1/ 5      1092.8(21:15)
 1/ 6      1081.4( 8:45)
 1/ 7      1084.3(10:05)
 1/ 8      1028.9(12:20)
 1/ 9      1464.6( 8:35)
 1/10       935.2( 1:35)
---------------------------------------------------------------------------------------
 1/11       938.4(11:10)
 1/12       927.4(15:25)
 1/13      1021.1(11:30)
 1/14       982.7(19:35)
 1/15       925.4(12:50)
 1/16       928.7( 4:10)
 1/17      2729.3(16:05)
 1/18
 1/19       943.0(15:40)
 1/20       926.7(12:05)
---------------------------------------------------------------------------------------
 1/21       900.0( 6:20)
 1/22       918.9( 2:25)
 1/23       925.4(14:15)
 1/24       947.5( 9:45)
 1/25       845.9( 5:15)
 1/26       812.7( 1:20)
 1/27       814.7(15:10)
 1/28       818.6(10:50)
 1/29       780.8(12:50)
 1/30       753.5( 2:45)
---------------------------------------------------------------------------------------
 1/31       681.8( 1:20)
```

```
            TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
        (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              NON-METHANE HYDROCARBONS

    SITE     023
DATE
------------------------------------------------------------------------------------------
 1/ 1        190.8( 8:55)
 1/ 2        184.3( 0:40)
 1/ 3        184.3(21:25)
 1/ 4        151.1(15:35)
 1/ 5        285.2(23:50)
 1/ 6       2218.7(13:50)
 1/ 7        707.9( 9:05)
 1/ 8
 1/ 9
 1/10
------------------------------------------------------------------------------------------
 1/11        220.8(18:10)
 1/12        432.4(16:35)
 1/13        231.8( 8:40)
 1/14        316.5(18:20)
 1/15        377.1(15:00)
 1/16        749.6( 3:40)
 1/17       2462.3(14:50)
 1/18
 1/19        134.8(20:25)
 1/20        156.3( 1:45)
------------------------------------------------------------------------------------------
 1/21        130.2(23:05)
 1/22        165.4(23:45)
 1/23        195.4(14:10)
 1/24        286.5(13:45)
 1/25        373.8( 6:55)
 1/26        470.8(16:20)
 1/27        402.5(14:25)
 1/28        350.4(20:55)
 1/29        426.6(12:40)
 1/30        526.8( 1:40)
------------------------------------------------------------------------------------------
 1/31        671.4(20:50)
```

```
   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
      TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
      PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              CARBON MONOXIDE

    SITE      023
DATE
--------------------------------------------------------------------------------
 1/ 1
 1/ 2
 1/ 3
 1/ 4
 1/ 5
 1/ 6
 1/ 7
 1/ 8
 1/ 9
 1/10
--------------------------------------------------------------------------------
 1/11
 1/12
 1/13      2956.3(16:40)
 1/14      1964.8(21:10)
 1/15      4419.6(16:45)
 1/16       355.6(17:30)
 1/17      4853.8(16:05)
 1/18
 1/19       405.7(23:55)
 1/20      2711.2(16:55)
--------------------------------------------------------------------------------
 1/21       461.6(16:50)
 1/22       963.4(10:25)
 1/23      1023.4(11:35)
 1/24      4486.8( 9:45)
 1/25       488.9(14:15)
 1/26      1007.5(12:10)
 1/27       752.2( 9:55)
 1/28       311.1(21:35)
 1/29       299.7(10:40)
 1/30       589.2(10:10)
--------------------------------------------------------------------------------
 1/31       556.2( 8:30)
```

```
        TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
 (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
           TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                   OZONE

    SITE      023
DATE
------------------------------------------------------------------------------------------
 1/ 1       82.1(16:00)
 1/ 2       74.2(12:10)
 1/ 3       78.1(18:55)
 1/ 4       74.2(11:50)
 1/ 5       66.4(13:45)
 1/ 6       80.1(23:10)
 1/ 7       80.1(12:10)
 1/ 8       74.2( 7:35)
 1/ 9       76.2(13:15)
 1/10       84.0(18:35)
------------------------------------------------------------------------------------------
 1/11       86.0(12:30)
 1/12       89.9(22:15)
 1/13       89.9( 0:05)
 1/14       84.0(15:55)
 1/15       86.0( 0:20)
 1/16       82.1( 0:30)
 1/17       80.1( 6:30)
 1/18       76.2(15:55)
 1/19       78.1(14:00)
 1/20       78.1(12:25)
------------------------------------------------------------------------------------------
 1/21       82.1(15:10)
 1/22       78.1( 1:40)
 1/23       68.4(13:25)
 1/24       76.2(11:50)
 1/25       82.1(12:50)
 1/26       78.1(11:05)
 1/27       76.2(10:20)
 1/28       72.3( 2:10)
 1/29       78.1(13:45)
 1/30       82.1(14:25)
------------------------------------------------------------------------------------------
 1/31       80.1(11:45)
```

```
   TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
       TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
       PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              BAROMETRIC PRESSURE

    SITE       023
DATE
----------------------------------------------------------------------------------------------------
 1/ 1       783.0(22:20)
 1/ 2       784.0( 8:30)
 1/ 3       782.0( 0:00)
 1/ 4       785.0(23:10)
 1/ 5       786.0(22:40)
 1/ 6       792.0(15:20)
 1/ 7       791.0( 0:00)
 1/ 8       782.0( 0:00)
 1/ 9       788.0(11:00)
 1/10       788.0( 0:30)
----------------------------------------------------------------------------------------------------
 1/11       791.0( 8:40)
 1/12       790.0( 0:00)
 1/13       787.0( 9:05)
 1/14       789.0( 7:15)
 1/15       792.0(21:05)
 1/16       797.0(22:55)
 1/17       798.0( 9:40)
 1/18       800.0( 9:05)
 1/19       796.0( 9:10)
 1/20       794.0(11:10)
----------------------------------------------------------------------------------------------------
 1/21       793.0( 0:05)
 1/22       790.0( 0:00)
 1/23       793.0(22:45)
 1/24       794.0(10:45)
 1/25       791.0( 0:00)
 1/26       789.0( 0:00)
 1/27       787.0( 9:00)
 1/28       789.0( 8:50)
 1/29       790.0(23:25)
 1/30       793.0(22:55)
----------------------------------------------------------------------------------------------------
 1/31       793.0( 0:00)
```

```
         TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
      (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPTIATION-INCHES)

                                   TOTAL PRECIPITATION

    SITE      023
DATE
------------------------------------------------------------------------------------------------
 1/ 1
 1/ 2
 1/ 3         .02(20:00)
 1/ 4
 1/ 5
 1/ 6
 1/ 7
 1/ 8
 1/ 9
 1/10
------------------------------------------------------------------------------------------------
 1/11
 1/12
 1/13
 1/14
 1/15
 1/16
 1/17
 1/18
 1/19
 1/20
------------------------------------------------------------------------------------------------
 1/21
 1/22
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 1/24
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 1/31
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            TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
       (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                 TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                 PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              WIND SPEED        -       WIND DIRECTION

   SITE 023
DATE       (   8-FT)                   ( 30-FT)                  (100-FT)                  (200-FT)
------------------------------------------------------------------------------------------------------
1/ 1        16.0   188.0(10:30)       21.0   208.0(14:55)       25.0   212.0(16:15)       27.0   216.0(16:15)
1/ 2        19.0   185.0(22:00)       24.0   186.0(22:00)       27.0   188.0(22:00)       29.0   201.0(21:15)
1/ 3        24.0   179.0(11:25)       26.0   178.0(11:10)       30.0   179.0(11:10)       33.0   183.0(11:10)
1/ 4        13.0   209.0( 0:05)       17.0   212.0( 0:05)       21.0   216.0( 0:05)       25.0   221.0( 0:05)
1/ 5         5.0   346.0(15:25)        7.0   306.0(15:25)        8.0   307.0(15:30)        9.0   311.0(15:30)
1/ 6         6.0   205.0(14:50)       10.0   200.0(15:55)       11.0   202.0(15:55)       12.0   205.0(16:00)
1/ 7        16.0   197.0(14:50)       19.0   217.0(13:05)       23.0   199.0(14:50)       25.0   206.0(14:50)
1/ 8         9.0   318.0(17:35)       12.0   317.0(17:35)       14.0   326.0(17:35)       16.0   323.0(17:35)
1/ 9        12.0   191.0(17:00)       16.0   188.0(18:40)       19.0   190.0(17:50)       24.0   197.0(18:35)
1/10        17.0   190.0( 9:55)       22.0   190.0( 9:55)       25.0   193.0( 9:50)       27.0   199.0( 9:50)
------------------------------------------------------------------------------------------------------
1/11         6.0   222.0(13:25)        9.0   159.0(17:20)       11.0   189.0(17:05)       14.0   206.0( 3:45)
1/12        16.0   225.0(13:30)       21.0   211.0(13:30)       25.0   213.0(13:30)       27.0   217.0(13:30)
1/13        10.0     2.0(14:50)       13.0   349.0(14:50)       15.0   279.0(14:50)       15.0   343.0(14:50)
1/14         7.0   250.0(13:05)        8.0   246.0(13:05)        9.0   252.0(13:05)       14.0   208.0(22:05)
1/15        13.0   178.0(10:15)       16.0   173.0( 6:05)       21.0   172.0( 6:05)       22.0   187.0( 5:20)
1/16         8.0   188.0( 2:25)       11.0   179.0( 2:30)       14.0   186.0( 2:15)       17.0   191.0( 2:25)
1/17         5.0   118.0(11:10)        6.0   193.0( 8:35)       10.0   194.0( 2:55)       14.0   298.0( 2:50)
1/18         9.0   213.0(12:35)       12.0   225.0(12:40)       17.0   206.0(22:35)       23.0   214.0(22:40)
1/19         7.0   202.0( 2:30)       10.0   202.0( 2:30)       16.0   202.0( 2:30)       18.0   205.0( 2:20)
1/20         6.0   214.0(15:05)       10.0   201.0(15:25)       12.0   202.0(17:25)       15.0   204.0(17:25)
------------------------------------------------------------------------------------------------------
1/21         9.0   215.0(13:35)       11.0   213.0(13:35)       13.0   214.0(15:15)       15.0   218.0(15:20)
1/22         5.0   238.0( 0:25)        7.0   233.0( 0:25)       10.0   219.0( 0:45)       12.0   231.0( 0:55)
1/23         6.0     2.0(13:55)        9.0   329.0(15:05)       10.0   218.0(15:05)       10.0    11.0(14:05)
1/24         7.0   350.0(13:05)        8.0   209.0(18:35)       12.0   201.0(19:20)       15.0   205.0(19:50)
1/25        11.0   221.0(13:15)       13.0   220.0(13:15)       15.0   210.0(14:20)       18.0   208.0(18:00)
1/26        13.0   212.0(12:25)       17.0   203.0(14:10)       19.0   212.0(13:55)       22.0   207.0(17:20)
1/27        13.0   193.0(14:35)       14.0   221.0(16:45)       17.0   224.0(16:45)       19.0   228.0(16:45)
1/28        13.0   209.0(13:05)       13.0   295.0(13:05)       15.0   299.0(13:05)       16.0   209.0(17:50)
1/29         9.0   334.0(14:20)       12.0   338.0(14:20)       14.0     2.0(15:35)       15.0   355.0(16:10)
1/30         6.0   215.0(13:00)        8.0   215.0(19:45)       10.0   209.0(19:45)       11.0   214.0(20:45)
------------------------------------------------------------------------------------------------------
1/31         9.0   220.0(13:00)       11.0   220.0(13:00)       14.0   173.0(23:00)       15.0   180.0(22:55)
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          TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN   1 THRU 31
        (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                        RELATIVE HUMIDITY

   SITE 023
DATE      (  8-FT)                 ( 30-FT)                 (100-FT)                 (200-FT)
----------------------------------------------------------------------------------------------------
1/ 1       79.0( 6:25)                                       83.0( 6:05)
1/ 2       81.0( 0:25)                                       83.0( 0:00)
1/ 3       94.0(23:05)                                       99.0(23:00)
1/ 4       96.0(18:30)                                      100.0(17:45)              93.0(19:15)
1/ 5       98.0(18:40)                                      100.0( 0:00)              94.0( 2:35)
1/ 6       97.0( 0:10)                                      100.0( 0:00)              92.0( 0:00)
1/ 7       91.0( 6:10)                                       93.0( 6:10)              81.0( 6:20)
1/ 8       94.0(21:25)                                      100.0(17:40)              89.0(16:20)
1/ 9       94.0( 1:35)                                      100.0( 0:00)              95.0( 0:05)
1/10       72.0( 0:40)                                       74.0( 0:50)              66.0( 0:10)
----------------------------------------------------------------------------------------------------
1/11       70.0( 7:40)                                       66.0( 5:45)              58.0( 5:45)
1/12       58.0( 2:15)                                       57.0( 5:10)              53.0(23:55)
1/13       84.0(23:35)                                       83.0(23:55)              80.0(21:20)
1/14       91.0( 7:00)                                       90.0( 7:10)              85.0( 7:10)
1/15       80.0( 2:25)                                       81.0( 4:20)              76.0( 4:15)
1/16       97.0(17:15)                                      100.0(16:00)              99.0(16:10)
1/17       91.0( 0:10)                                       86.0( 0:00)              82.0( 0:00)
1/18       90.0( 6:10)                                       84.0( 6:50)              80.0( 7:00)
1/19       81.0( 7:00)                                       78.0( 6:25)              73.0( 7:45)
1/20       81.0( 2:30)                                       74.0( 1:40)              70.0( 0:55)
----------------------------------------------------------------------------------------------------
1/21       72.0( 2:40)                                       68.0( 1:50)              63.0( 1:50)
1/22      100.0(18:30)                                      100.0( 4:45)             100.0(21:00)
1/23      100.0( 0:00)                                      100.0( 0:00)             100.0( 0:00)
1/24      100.0( 0:00)                                      100.0( 0:00)             100.0( 0:00)
1/25       97.0( 5:30)                                       96.0( 5:15)              94.0( 5:05)
1/26       92.0( 7:15)                                       94.0( 7:10)              93.0( 7:10)
1/27       91.0( 6:45)                                       96.0( 8:20)              93.0( 7:35)
1/28       83.0( 7:15)                                       83.0( 0:00)              79.0( 0:00)
1/29       71.0( 6:25)                                       74.0( 6:30)              68.0( 6:20)
1/30       71.0( 6:05)                                       72.0( 9:00)              65.0( 6:20)
----------------------------------------------------------------------------------------------------
1/31       61.0( 0:20)                                       62.0( 0:55)              58.0( 0:50)
```

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     TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR JAN    1 THRU 31
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
       TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
       PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                 TEMPERATURE

  SITE 023
DATE     (  8-FT)             ( 30-FT)              (100-FT)              (200-FT)
----------------------------------------------------------------------------------------
1/ 1     34.0(12:15)          29.0(11:55)           28.0(12:25)           28.0(14:55)
1/ 2     34.0(14:00)          29.0(13:40)           27.0(13:30)           26.0(13:50)
1/ 3     34.0(14:25)          32.0(14:30)           31.0(14:40)           31.0(18:20)
1/ 4     29.0(13:55)          25.0(13:05)           23.0(12:20)           22.0(12:35)
1/ 5     18.0(15:45)          13.0( 0:10)           13.0( 1:10)           11.0( 1:05)
1/ 6     25.0(14:50)          21.0(13:50)           20.0(13:40)           18.0(14:00)
1/ 7     24.0(12:35)          20.0(12:35)           19.0(12:35)           20.0(13:15)
1/ 8     17.0(11:30)          12.0(12:40)           12.0( 5:25)           10.0( 3:30)
1/ 9     17.0(15:20)          13.0(15:00)           13.0(15:20)           10.0(15:20)
1/10     24.0(13:45)          21.0(13:45)           20.0(13:40)           19.0(15:10)
----------------------------------------------------------------------------------------
1/11     33.0(13:50)          30.0(14:20)           29.0(14:00)           28.0(14:25)
1/12     38.0(13:20)          34.0(13:10)           33.0(13:20)           33.0(13:20)
1/13     32.0(12:45)          29.0(11:50)           28.0(13:15)           26.0(12:50)
1/14     30.0(13:05)          27.0(12:50)           26.0(15:45)           24.0(15:40)
1/15     36.0(14:00)          33.0(14:05)           31.0(14:20)           30.0(14:05)
1/16     31.0(11:45)          29.0(12:10)           27.0(11:25)           26.0(11:50)
1/17     40.0(15:40)          38.0(15:30)           36.0(15:00)           35.0(15:25)
1/18     47.0(13:40)          44.0(12:15)           44.0(15:50)           41.0(13:25)
1/19     44.0(14:25)          41.0(14:30)           39.0(14:25)           38.0(14:45)
1/20     46.0(13:40)          45.0(14:40)           43.0(14:35)           42.0(14:40)
----------------------------------------------------------------------------------------
1/21     47.0(13:30)          44.0(12:45)           43.0(12:45)           41.0(12:50)
1/22     36.0(13:30)          34.0( 0:00)           37.0( 0:00)           35.0( 0:00)
1/23     33.0(13:15)          30.0(13:05)           28.0( 0:00)           26.0( 0:00)
1/24     33.0(13:35)          30.0(13:45)           30.0(15:20)           27.0(14:50)
1/25     36.0(14:40)          32.0(13:10)           32.0(15:05)           29.0(14:25)
1/26     34.0(13:45)          31.0(13:30)           31.0(16:00)           30.0(14:05)
1/27     39.0(14:25)          35.0(14:25)           33.0(13:55)           31.0(13:45)
1/28     44.0(15:00)          40.0(15:10)           39.0(15:05)           37.0(15:10)
1/29     34.0(14:55)          36.0(13:25)           35.0(13:25)           33.0(14:20)
1/30     37.0(14:45)          34.0(14:40)           34.0(15:35)           32.0(15:25)
----------------------------------------------------------------------------------------
1/31     45.0(14:40)          42.0(12:25)           40.0(12:20)           39.0(12:45)
```

TABLE VI
THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR JANUARY 1 THRU 31

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                TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC    1-31
                              (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                       UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                 WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                          NITROGEN OXIDES[WS: WD]
                                             1-HOUR
SITE              023

 1. 1/ 7( 2:55- 3:55)  24.7[ 4:130]
 2. 1/ 7(11:10-12:10)  14.7[12:272]
 3. 1/ 6(22:20-23:20)  14.5[ 2:112]
 4. 1/ 6( 9:25-10:25)  12.2[ 1: 54]
 5. 1/25(11:40-12:40)  11.9[ 2:290]
--------------------------------------------------------------------------------------------

                                          NITRIC OXIDE[WS: WD]
                                             1-HOUR
SITE              023

 1. 1/ 8(21:35-22:35)  10.9[ 6:291]
 2. 1/ 7(22:20-23:20)   7.3[ 3:129]
 3. 1/ 7(11:05-12:05)   6.6[11:272]
 4. 1/ 9( 3:30- 4:30)   5.5[ 2:234]
 5. 1/ 6(17:30-18:30)   5.0[ 3: 90]
--------------------------------------------------------------------------------------------

                                          NITROGEN DIOXIDE[WS: WD]
                                             1-HOUR
SITE              023

 1. 1/ 7( 2:55- 3:55)  24.7[ 4:130]
 2. 1/ 6(22:20-23:20)  14.5[ 2:112]
 3. 1/ 6( 9:25-10:25)  12.2[ 1: 54]
 4. 1/25(11:40-12:40)  11.9[ 2:290]
 5. 1/ 6(10:30-11:30)   8.9[ 1: 10]
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           TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC   1-31
                    (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                      WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                 SULFUR DIOXIDE[WS: WD]
                                   1-HOUR
SITE             023

 1. 1/20(15:05-16:05)  21.1[ 7:197]
 2. 1/21( 4:30- 5:30)  19.5[ 1: 82]
 3. 1/21( 6:30- 7:30)  18.5[ 2:146]
 4. 1/25(13:35-14:35)  17.8[11:214]
 5. 1/21( 3:10- 4:10)  16.9[ 3:128]
--------------------------------------------------------------------------------------------

                                 SULFUR DIOXIDE[WS: WD]
                                   3-HOUR
SITE             023

 1. 1/21( 4:30- 7:30)  17.6[ 2:131]
 2. 1/25(13:25-16:25)  15.1[10:215]
 3. 1/25(17:30-20:30)  15.1[ 5:153]
 4. 1/26( 1:50- 4:50)  14.5[ 4:124]
 5. 1/25(21:50- 0:50)  14.3[ 3:130]
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                                 SULFUR DIOXIDE[WS: WD]
                                  24-HOUR
SITE             023

 1. 1/25- 1/26( 5:00)  11.5[ 5:148]
 2. 1/23- 1/24( 6:00)   9.9[ 2:317]
 3. 1/21- 1/22( 3:00)   7.2[ 4:177]
 4. 1/26- 1/27(10:00)   2.1[ 6:158]
 5. 1/ 9- 1/10(17:00)   1.2[ 9:168]
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          TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC    1-31
                     (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                      UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                             WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                            HYDROGEN SULFIDE(WS: WD)
                                                1-HOUR
SITE                023

 1. 1/ 2( 1:55- 2:55)   5.5[13:201]
 2. 1/ 1(23:10- 0:10)   5.4[12:138]
 3. 1/ 2( 8:30- 9:30)   5.3[15:201]
 4. 1/ 3( 8:25- 9:25)   5.1[12:154]
 5. 1/ 2( 3:10- 4:10)   4.8[13:194]
------------------------------------------------------------------------------------------------------

                                           TOTAL HYDROCARBONS(WS: WD)
                                               3-HOUR(5-9AM)
SITE                023

 1. 1/ 7( 6:00- 9:00)1554.6[ 5:139]
 2. 1/ 6( 6:00- 9:00)1434.5[ 2:199]
 3. 1/30( 6:00- 9:00)1092.9[ 1:165]
 4. 1/31( 6:00- 9:00)1089.3[ 3:121]
 5. 1/13( 6:00- 9:00)1080.9[ 1:114]
   PRIMARY STANDARD EXCEEDED  24 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED  24 TIMES AT SITE 023
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                                   TABLE VI. THE FIVE MAXIMUM AVERAGES FOR DEC    1-31
                                            (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                                  UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                         WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                                   METHANE(WS: WD)
                                                     3-HOUR(6-9AM)
SITE                   023

 1. 1/ 9( 6:00- 9:00) 959.8[ 0:176]
 2. 1/ 6( 6:00- 9:00) 945.7[ 2:199]
 3. 1/ 7( 6:00- 9:00) 933.3[ 5:139]
 4. 1/ 5( 5:00- 9:00) 922.4[ 1:178]
 5. 1/10( 6:00- 9:00) 920.0[ 9:185]
   PRIMARY STANDARD EXCEEDED  28 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED  28 TIMES AT SITE 023
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                     TABLE VI, THE FIVE MAXIMUM AVERAGES FOR DEC   1-31
                           (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                    UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                         WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                 NON-METHANE HYDROCARBONS[WS: WD]
                                      3-HOUR(6-9AM)
SITE          023

 1. 1/ 7( 6:00- 9:00) 621.3[ 5:139]
 2. 1/ 6( 6:00- 9:00) 488.8[ 2:199]
 3. 1/31( 6:00- 9:00) 440.2[ 3:121]
 4. 1/30( 6:00- 9:00) 381.4[ 1:165]
 5. 1/29( 6:00- 9:00) 321.4[ 4:142]
   PRIMARY STANDARD EXCEEDED  20 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED  20 TIMES AT SITE 023
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          TABLE VI, THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC   1-31
                   (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
               UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                   WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                 CARBON MONOXIDE(WS: WD)
                                     1-HOUR
SITE              023

 1. 1/13(15:40-16:40) 716.4[ 2:124]
 2. 1/15(15:50-16:50) 708.3[ 5:145]
 3. 1/27( 9:20-10:20) 700.6[ 5:201]
 4. 1/17(15:05-16:05) 590.0[ 3:106]
 5. 1/27(12:35-13:35) 585.6[ 6:233]
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TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC   1-31
          (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
     UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
             WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                          CARBON MONOXIDE[WS: WD]
                                  8-HOUR

SITE                 023

 1. 1/27( 6:55-14:55) 584.7[ 5:192]
 2. 1/30( 9:55-17:55) 551.1[ 3: 31]
 3. 1/30(18:55- 2:55) 521.3[ 2:120]
 4. 1/31( 3:55-11:55) 485.7[ 3:177]
 5. 1/24( 2:55-10:55) 392.6[ 2:329]
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             TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR DEC    1-31
                        (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                    UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                        WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                        OZONE[WS: WD]
                                           1-HOUR

SITE                0023

 1. 1/12(21:55-22:55)  88.7[ 3:139]
 2. 1/12(23:20- 0:20)  88.7[ 2:145]
 3. 1/13( 0:55- 1:55)  88.1[ 3:101]
 4. 1/12(19:50-20:50)  87.6[ 2: 87]
 5. 1/15(11:10-12:10)  84.7[15:192]
-----------------------------------------------------------------------------------------------
```

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                        TABLE VI. THE FIVE MAXIMUM AVERAGES FOR DEC   1-31
                       UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER

                                          PARTICULATE
                                            24-HOUR
SITE             023

        1    1/22    22.0
        2    1/29     9.0
        3    1/ 3     8.0
        4    1/24     7.0
        5    1/25     7.0
-----------------------------------------------------------------------------------------
```

TABLE VII
FUNCTIONAL DEPENDENCE OF RECORDED PARAMETERS UPON WIND DIRECTION

RADIAN
CORPORATION

```
                        NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

         NITROGEN OXIDES(NOX)                                               C-B SHALE OIL  PROJECT
                                   TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                           WIND DIRECTION
                    N   NNE    NE   ENE     E   ESE    SE   SSE     S  SSW    SW   WSW     W   WNW    NW   NNW CALM   TOTAL
 CONCENTRATION
   UG/M**3
   GT   160 :                                                                                                    :
 140 -  160 :                                    1                                                               :     1
 120 -  140 :                                    0                                                               :     0
 110 -  120 :                                    1     1                                                         :     2
 100 -  110 :                                    0     0                                                         :     0
  90 -  100 :                                    0     0                                                         :     0
  80 -   90 :                        1           0     0                                                         :     1
  70 -   80 :                        0           0     1                                                         :     1
  60 -   70 :                        0           0     1                 1                                       :     2
  50 -   60 :                        0           1     0     1     1     0                                       :     3
  40 -   50 :                        1           0     0     0     0     0                                       :     1
  30 -   40 :                        0           1     0     1     0     0     1                                 :     3
  20 -   30 :                  1     2     2     2     0     0     1     5     0           2                     :    15
  10 -   20 :     5     3     2     2     2     8    15    14     0    16     8     5     2    17     6     1     4 :   110
    LT   10 :   108   100   109   187   259   404   455   525   752  1150   414   171   223   216   103    90   223 :  5499
     TOTAL  :   113   103   112   193   273   418   473   541   754  1172   423   176   227   233   109    91   227 :  5638
            ..........................................................................................................
     MEAN        0.    1.    0.    1.    0.    2.    1.    0.    0.    0.    0.    0.    0.    1.    0.    0.    0.     0.
```

RADIAN
CORPORATION

```
                         NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

           NITRIC OXIDE(NO)                                                    C-B SHALF OIL PROJECT
                                   TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                               WIND DIRECTION
                     N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
CONCENTRATION
  UG/M**3
   GT   160 :                                                                                         :
 140 -  160 :                                                                                         :
 120 -  140 :                                                                                         :
 110 -  120 :                                                                                         :
 100 -  110 :                                                                                         :
  90 -  100 :                                                                                         :
  80 -   90 :                                                                                         :
  70 -   80 :                                                                                         :
  60 -   70 :                                                                                         :
  50 -   60 :                                              1                                          :     1
  40 -   50 :                                              0                                          :     0
  30 -   40 :                                              0                                          :     0
  20 -   30 :                  1    2                      0    1                                     :     4
  10 -   20 :    2             0    0    1    7   14   13    0   12    6    4    2   14    5    1    2 :    83
   LT    10 :  112  104  112  192  272  411  460  528  753 1160  419  175  229  223  104   91  225 :  5570
   TOTAL    :  114  104  113  194  273  418  474  541  754 1173  425  179  231  237  109   92  227 :  5658
            ...........................................................................................
    MEAN        0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   1.   0.   0.   0.      0.
```

```
                             NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

              NITROGEN DIOXIDE(NO2)                                                  C-B SHALE OIL PROJECT
                                           TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                                         WIND DIRECTION
                        N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  CALM   TOTAL
 CONCENTRATION
   UG/M**3
    GT    160 :                                                                                                     :
 
 140 -    160 :                                 1                                                                   :      1

 120 -    140 :                                 0                                                                   :      0

 110 -    120 :                                 1     1                                                             :      2

 100 -    110 :                                 0     0                                                             :      0

  90 -    100 :                                 0     0                                                             :      0

  80 -     90 :                                 0     0                                                             :      0

  70 -     80 :                                 0     0                                                             :      0

  60 -     70 :                     1           0     1                                                             :      2

  50 -     60 :                     0           1     1     1                                                       :      3

  40 -     50 :                     0           0     0     0           1                                           :      1

  30 -     40 :                     0           1     0     1           0     1                                     :      3

  20 -     30 :                     3     2     2     0     0           3     0           2                         :     12

  10 -     20 :     3     3     2     2     1     1     2     1     1     4     2     1     0     3     1           2 :     29

   LT      10 :   110   100   110   187   270   411   468   538   753  1164   420   175   225   230   108    91   225 :   5585

    TOTAL     :   113   103   112   193   273   418   473   541   754  1172   423   176   227   233   109    91   227 :   5638
              ........................................................................................................................

     MEAN          0.    1.    0.    1.    0.    1.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.      0.
```

```
                     NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

         SULFUR DIOXIDE(SO2)                                                      C-B SHALE OIL PROJECT
                                    TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                               WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
 CONCENTRATION
   UG/M**3
     GT   140 :                                                    1                                     :     1

 130 -    140 :                                                    0                                     :     0

 120 -    130 :                                                    0                                     :     0

 110 -    120 :                                                    0                                     :     0

 100 -    110 :                                                    1                                     :     1

  90 -    100 :                                                    0                                     :     0

  80 -     90 :                                                    0                                     :     0

  70 -     80 :                                                    0                                     :     0

  60 -     70 :                                                    0                                     :     0

  50 -     60 :                                                    0                                     :     0

  40 -     50 :                                                    0                                     :     0

  30 -     40 :                                  2                 1                                     :     3

  20 -     30 :      1         1    6   12   11   18    4    3   19    3         5    5    1   15    4 :   108

  10 -     20 :      6    6    1   22   43   52   60   31   35  128   34    8   29   43   10   95   15 :   618

     LT    10 :    171  169  200  298  404  608  631  742 1097 1467  575  224  290  343  150  220  354 :  7943

      TOTAL   :    178  175  202  326  459  671  711  777 1135 1617  612  232  324  391  161  330  373 :  8674
              ******************************************************************************************

      MEAN          0.   0.   0.   2.   2.   2.   2.   0.   0.   2.   1.   0.   2.   2.   2.   6.   1.     2.
```

```
                         NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

        HYDROGEN SULFIDE(H2S)                                                  C-B SHALE OIL PROJECT
                                  TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                             WIND DIRECTION
                     N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM  TOTAL
 CONCENTRATION
   UG/M**3
   GT    140 :                                                                                      :

 130 -   140 :                                                                                      :

 120 -   130 :                                                                                      :

 110 -   120 :                                                                                      :

 100 -   110 :                                                                                      :

  90 -   100 :                                                                                      :

  80 -    90 :                                                                                      :

  70 -    80 :                                                                                      :

  60 -    70 :                                                                                      :

  50 -    60 :                                                                                      :

  40 -    50 :                                                                                      :

  30 -    40 :                                                  1                                   :     1

  20 -    30 :               1                                  0                                   :     1

  10 -    20 :               0                                  1                                   :     1

    LT    10 :   177  173  198  321  448  630  658  729 1131 1610  599  209  274  286  119  324  340 : 8217

     TOTAL   :   177  173  199  321  448  630  658  729 1131 1612  599  209  274  286  119  324  340 : 8220
             ..........................................................................................

      MEAN        0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
```

RADIAN
CORPORATION

```
                    NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

       TOTAL HYDROCARBONS                                          C-B SHALE OIL PROJECT
                             TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                   WIND DIRECTION
                 N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  CALM   TOTAL
 CONCENTRATION
   UG/M**3
   GT   4000 :                                                                                                  :
3600 -  4000 :                                                                                                  :
3400 -  3600 :                                                                                                  :
3200 -  3400 :                           1           1                                                          :      2
3000 -  3200 :                           0           0                       1                                  :      1
2800 -  3000 :                           0           0                       0                                  :      0
2600 -  2800 :                     2     0     1     0     1                 0                                  :      4
2400 -  2600 :                     0     0     0     0     0                 0                                  :      0
2200 -  2400 :                     0     0     0     0     0                 0                                  :      0
2000 -  2200 :                     0     0     0     0     0                 0                                  :      0
1800 -  2000 :                     0     0     0     0     0                 0                                  :      0
1600 -  1800 :                     0     1     1     7     7     2     2     0                             1    :     21
   LT   1600 :  148   139   151   245   360   526   545   645   925  1446   549   196   261   272   107   308   319 :  7142
     TOTAL   :  148   139   151   247   362   528   553   653   927  1448   550   196   261   272   107   308   320 :  7170
             ...........................................................................................................
  MEAN/100      11.   11.   11.   11.   11.   10.   11.   11.   11.   11.   11.   11.   11.   11.   11.   10.   11.   11.
```

```
                        NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

        METHANE(CH4)                                                       C-B SHALE OIL PROJECT
                                TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                                 WIND DIRECTION
                  N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  CALM   TOTAL
 CONCENTRATION
   UG/M**3
   GT  2400 :                             1                                                                       :     1

2200 -  2400 :                            0                                                                       :     0

2000 -  2200 :                            0                                                                       :     0

1800 -  2000 :                            0                                                                       :     0

1600 -  1800 :                            0                                                                       :     0

1400 -  1600 :                            0                 1                                                     :     1

1200 -  1400 :                            0                 1                                                     :     1

1000 -  1200 :                            0                 2           2                 2           1           :     7

 800 -  1000 :    97   110   121   184   298   468   491   592   984  1247   477   179   286   359   134   274   286 :  6587

 600 -   800 :    72    55    58   100   118   162   153   147   123   290   105    44    24    22    21    43    75 :  1612

 400 -   600 :     0     0     0     0     2     1     1     3     0     0     0     0     0     0     0     0     0 :     7

 200 -   400 :     0     0     0     0     1     1     0     1     0     0     0     0     0     0     0     0     0 :     3

   LT   200 :     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0 :     0

    TOTAL   :   169   165   179   284   420   632   645   747  1107  1539   582   223   312   381   156   317   361 :  8219
            ..............................................................................................................

    MEAN        832.  839.  849.  844.  857.  856.  859.  873.  889.  875.  874.  882.  907.  910.  893.  863.  878.  872.
```

RADIAN
CORPORATION

```
                          NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

               NON-METHANE HYDROCARBONS                                          C-B SHALE OIL PROJECT
                                   TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                                WIND DIRECTION
                   N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
 CONCENTRATION
   UG/M**3
  GT    3000 :                                                                                     :

2800 -  3000 :                                                                                     :

2600 -  2800 :                                                                                     :

2400 -  2600 :                                         1                                           :     1

2200 -  2400 :                                    1    0              1                            :     2

2000 -  2200 :                               1    0    0              0                            :     1

1800 -  2000 :                               0    0    0              0                            :     0

1600 -  1800 :                     1         0    0    0              0                            :     1

1400 -  1600 :                     0         0    0    0              0                            :     0

1200 -  1400 :                     0         0    0    0              0                            :     0

1000 -  1200 :                     0         0    0    0              0                            :     0

 800 -  1000 :                     0         1    1    0              0                            :     2

 600 -   800 :          1          0    3    4   11   17    4    3    0                          3 :    46

  LT     600 :   148  138  151  245  359  522  542  635  923 1445  549  196  261  272  107  307  317 :  7115

   TOTAL     :   148  139  151  246  362  528  553  653  927 1448  550  196  261  272  107  307  320 :  7168
             ...........................................................................................

   MEAN         253. 250. 225. 230. 211. 199. 211. 215. 174. 182. 204. 189. 171. 162. 196. 191. 214.   197.
```

```
                         NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

          CARBON MONOXIDE(CO)                                                        C-B SHALE OIL PROJECT
                                       TRAILER NO. -  23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                                      WIND DIRECTION
                       N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW CALM   TOTAL
 CONCENTRATION
   UG/M**3
     GT  4250 :                                1           1                                                     1        :   3

 3750 -  4000 :                                1           0                                                     0        :   1

 3500 -  3750 :                                0           0                                                     0        :   0

 3250 -  3500 :                                0           0                                                     0        :   0

 3000 -  3250 :                                0           0                                                     0        :   0

 2750 -  3000 :                                0           0     1                                               0        :   1

 2500 -  2750 :                                0           0     0           1                                   0        :   1

 2250 -  2500 :                                0     1     0     0           0                                   1        :   2

 2000 -  2250 :                                0     0     0     1           0                                   0        :   1

 1750 -  2000 :                                0     0     1     0     1     0                                   0        :   2

 1500 -  1750 :                                0     0     0     0     0     0     1                             0        :   1

 1250 -  1500 :                                0     0     0     0     0     0     0                             0        :   0

     LT  1250 :  133   123   123   164   271   371   399   391   525   762   331   126   157   168    81   300   215 : 4660

      TOTAL   :  133   123   123   164   273   372   401   393   526   763   332   126   157   168    81   302   215 : 4672
              ......................................................................................................
       MEAN     338.  349.  356.  329.  351.  333.  341.  325.  326.  397.  348.  320.  314.  311.  325.  345.  322.  326.
```

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

OZONE(O3)

C-B SHALE OIL PROJECT

TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

CONCENTRATION UG/M**3		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM		TOTAL
GT 240	:																		:	
220 - 240	:																		:	
200 - 220	:																		:	
180 - 200	:																		:	
160 - 180	:																		:	
140 - 160	:																		:	
120 - 140	:																		:	
100 - 120	:																		:	
80 - 100	:	12	10	11	21	39	42	59	90	266	129	69	25	30	21	15	6	6	:	851
60 - 80	:	155	158	177	298	405	607	639	681	858	1464	480	171	201	263	136	174	293	:	7160
40 - 60	:	11	7	14	7	14	22	13	6	11	51	71	36	79	101	10	117	71	:	641
20 - 40	:	0	0	0	0	0	0	0	0	0	0	1	0	14	6	0	33	3	:	57
LT 20	:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	:	0
TOTAL	:	178	175	202	326	458	671	711	777	1135	1644	621	232	324	391	161	330	373	:	8709
MEAN		71.	70.	70.	71.	72.	71.	72.	72.	74.	72.	59.	68.	64.	64.	69.	58.	66.		70.

TABLE VIII
DIURNAL VARIATION OF VARIOUS RECORDED PARAMETERS

RADIAN
CORPORATION

```
                 DIURNAL VARIATION OF NITROGEN OXIDES(UG/M**3)
                   TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                              HOUR
        1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

  1     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     1
  2     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
  3     *   *   *   *   *   *   *   *   *   *   :       *   *       *   *   *   *   *   *   *   *   *     0
  4     *   *   *   *   *   *   *   *   *   *   *   *   *   *   :   *:                                    1
  5                                                         :   *   *   *   *   *   *   *   *   *   *     1
  6     *   *   *   *   *   *   *   *   *   9   *   *   *   *   *   :   *  10   *   *   *   *  15   *     3
  7     *   *   9  24   *   *   *   *   *   *:  :  12   *                                  11   *   *     6
  8     *   *      10  23  13       *   *   *   *   *   *   *   *   *   *   *   *   *   *       *   *     4
  9     *   *           *   *   *   *   *   *       :                                                 2
 10
 11                                                     :   :
 12
 13                 :                                       :   :
 14                 :                                                   *   *   *   *   *   *   *   *     0
 15     *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 16     *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 17     *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 18     *   *   *   *   *   *   *   *   *   *                                                             0
 19                                                             :   *:  *   *   *   *   *   *   *   *     0
 20     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 21     *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *     0
 22     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 23     *   *                                                                                             0
 24                                         :   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 25     *   *   *   *   *   *   *   *   *   *   *  11   *:  *   *   *   *   *   *   *   *   *   *   *     1
 26     *   *   *   *   *   *   *   *   *   *   *:  :   *:  :   :   :   *:  *   *   *   *   *   *   *     0
 27     *   *   *   *   *   *   *   *   *   *   *   *   *   *   :   *:                                    1
 28                                             :   :       *   *   *   *   *   *   *   *   *   *   *     0
 29     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 30     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     1
 31     *   *   *   *   *   *   *   *   *   *   *:                                                        1
MEAN    0   1   0   2   1   1   0   0   1   1   1   2   1   1   0   1   0   1   0   0   0   1   1   1

                        TOTAL NUMBER OF OBSERVATIONS =  5571     MEAN  =         1.

               * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

               : INDICATES CALIBRATION DURING THE HOUR
```

DIURNAL VARIATION OF NITRIC OXIDE(UG/M**3)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
3	*	*	*	*	*	*	*	*	*	*	:		*	*		*	*	*	*	*	*	*	*	*	0
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	:	*:									0
5														:	*	*	*	*	*	*	*	*	*	*	0
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	:	*	*	*	*	*	*	*	*	0
7	*	*	*	*	*	*	*	*	*	*:	:	*	*									11	*	*	2
8	*	*		15	14	13		*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	4
9	*	*			*	*	*	*	*	*		:													2
10																									
11													:	:											
12																									
13				:										:	:										
14				:													*	*	*	*	*	*	*	*	0
15	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
16	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
17	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
18	*	*	*	*	*	*	*	*	*	*															0
19															:	*:	*	*	*	*	*	*	*	*	0
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
21	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
23	*	*																							0
24										:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
25	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	0
26	*	*	*	*	*	*	*	*	*	*	*:	:	*:	:	:	:	*:	*	*	*	*	*	*	*	0
27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	:	*:									0
28											:	*:	*	*	*	*	*	*	*	*	*	*	*	*	0
29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
31	*	*	*	*	*	*	*	*	*	*	*:														0
MEAN	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	

TOTAL NUMBER OF OBSERVATIONS = 5595 MEAN = 0.

* DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

: INDICATES CALIBRATION DURING THE HOU

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                 DIURNAL VARIATION OF NITROGEN DIOXIDE(UG/M**3)
                  TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                            HOUR
     1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24    MEAN
DAY

  1  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       1
  2  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
  3  *   *   *   *   *   *   *   *   *   *    :      *   *       *   *   *   *   *   *   *   *   *       0
  4  *   *   *   *   *   *   *   *   *   *   *   *   *   *    :  *:                                      0
  5                                                       :  *   *   *   *   *   *   *   *   *   *       1
  6  *   *   *   *   *   *   *   *   *   9   *   *   *   *   *    :  *   *   *   *   *   *  15   *       2
  7  *   *   9  24   *   *   *   *   *   *:   :  *   *                                   *   *   *       4
  8  *   *       *   9   *       *   *   *   *   *   *   *   *   *   *   *   *   *   *       *   *       0
  9  *   *           *   *   *   *   *   *        :                                                      0
 10
 11                                                   :   :
 12
 13               :                                       :   :
 14               :                                                  *   *   *   *   *   *   *   *       0
 15  *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
 16  *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
 17  *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
 18  *   *   *   *   *   *   *   *   *   *                                                               0
 19                                                           :  *:  *   *   *   *   *   *   *   *       0
 20  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
 21  *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *       0
 22  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
 23  *   *                                                                                               0
 24                                       :  *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
 25  *   *   *   *   *   *   *   *   *   *   *  11   *:  *   *   *   *   *   *   *   *   *   *   *       1
 26  *   *   *   *   *   *   *   *   *   *   *:    :  *:    :   :   :  *:  *   *   *   *   *   *   *       0
 27  *   *   *   *   *   *   *   *   *   *   *   *   *   *    :  *:                                      1
 28                                           :   :      *   *   *   *   *   *   *   *   *   *   *       0
 29  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       0
 30  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *       1
 31  *   *   *   *   *   *   *   *   *   *   *:                                                          1
MEAN 0   0   0   2   1   0   0   0   1   1   1   2   1   0   0   0   0   0   0   0   0   0   1   0

                     TOTAL NUMBER OF OBSERVATIONS =  5571     MEAN  =       0.

            * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

            : INDICATES CALIBRATION DURING THE HOUR
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                    DIURNAL VARIATION OF SULFUR DIOXIDE(UG/M**3)
                     TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                              HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

  1       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0
  2       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0
  3       *   *   *   *   *   *   *   *   *   *  *:   *   *   *   *   *   *   *   *   *   *   *   *   *    0
  4       *   *   *   *   *   *   *   *   *   *   *   *   *   *  *:   *   *   *   *   *   *   *   *   *    1
  5       *   *   *   *   *   *   *   *   *   *   *   *   *  *:   *   *   *   *   *   *   *   *   *   *    0
  6       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   :   *   *   *   *   *   *   *   *    0
  7       *   *   *   *   *   *   *   *   *  *:  *:   *   *   *   *   *   *   *   *   *   *   *   *   *    0
  8       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0
  9       *   *       *   *   *   *   *   *   *      *:   *   *   *   *   *   *   *   *   *   *   *   *    1
 10       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    1
 11       *   *   *   *   *   *   *   *   *   *   *   *  *:   :   *   *   *   *   *   *   *   *   *   *    1
 12       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   :   *   *   *   *   *   *   *    0
 13       *   *   *  *:   *   *   *   *   *   *   *   *   *  *:   :   *   *   *   *   *   *   *   *   *    0
 14       *   *   *  *:   *   *   *   *   *   *   *   *   *   *           *   *   *   *   *   *   *   *    0
 15       *   *   *  *:   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0
 16       *   *   *  *:   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0
 17       *   *   *  *:   *   *   *   *   *   *   *   *  *:   *   *   *   *   *   *   *   *   *   *   *    0
 18       *   *   *   *   *   *   *   *   *   *       :   :   :   : 13:   *   *   *   *   *   *   *   *    1
 19       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    1
 20       *   *   *  13   *   *   *   *   *   *   *   *   *   *   *  13   *   *   *   *   *   *   *   *    4
 21       *   *   *  13  16  16  15  16  16  16  *:   *   *   *   *   *   *   *   *   *   *   *   *   *    6
 22       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    4
 23       *   *   *   *   *   *   *  13   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   10
 24       *   *   *   *   *   *   *   *   *  *:   *   *   *   *   *   *   *   *   *  13   *   *   *  14    8
 25      13   *   *   *   *   *   *   *   *   *   *   *  *:  14  15  13   *  14  15  13  13   *  14  13   10
 26      14   *   *  15  15   *   *   *   *   *  *:   *  14   *   *   *   *   *   *   *   *   *   *   *    5
 27       *   *   *   *   *   *   *   *   *   :  *:   *   *   *   *   *   *   *   *   *   *   *   *   *    0
 28       *   *   *   *   *   *   *   *   *   *  *:  *:   *   *   *   *   *   *   *   *   *   *   *   *    0
 29       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0
 30       *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *    0
 31       *   *   *   *   *   *   *   *   *   *  *:   *   *   *   *   *   *   *   *   *   *   *   *   *    0
 MEAN     2   2   2   3   3   2   2   2   2   2   1   2   1   1   1   3   1   1   1   2   1   1   2   2

                     TOTAL NUMBER OF OBSERVATIONS =  8660     MEAN  =      2.

          * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

          : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

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                 DIURNAL VARIATION OF HYDROGEN SULFIDE(UG/M**3)
                    TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                   HOUR
        1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  MEAN
 DAY

   1    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     2
   2    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     3
   3    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *     2
   4    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *     0
   5    *    *    *    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *     0
   6    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     :   *    *    *    *    *    *    *    *     0
   7    *    *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *                              0
   8
   9                                                       *:   *    *    *    *    *    *    *    *    *    *    *    *    *     0
  10    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  11    *    *    *    *    *    *    *    *    *    *    *    *    *:    :   *    *    *    *    *    *    *    *    *    *     0
  12    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  13    *    *    *    *:   *    *    *    *    *    *    *    *    *    *:    :   *    *    *    *    *    *    *    *    *     0
  14    *    *    *    *:   *    *    *    *    *    *    *    *    *    *              *    *    *    *    *    *    *    *     0
  15    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  16    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  17    *    *    *    *:   *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *     0
  18    *    *    *    *    *    *    *    *    *    *          :    :    :    :   *:   *    *    *    *    *    *    *    *     0
  19    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  20    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     1
  21    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *     0
  22    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  23    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  24    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  25    *    *    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *     0
  26    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *     0
  27    *    *    *    *    *    *    *    *    *     :   *:   *    *    *    *:   *    *    *    *    *    *    *    *    *     0
  28    *    *    *    *    *    *    *    *    *    *    *:   *:   *    *    *    *    *    *    *    *    *    *    *    *     0
  29    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  30    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *    *     0
  31    *    *    *    *    *    *    *    *    *    *    *:   *    *    *    *    *    *    *    *    *    *    *    *    *     0
 MEAN   1    1    1    1    1    0    0    1    1    1    0    0    0    0    0    0    0    0    0    0    0    0    0    1

                       TOTAL NUMBER OF OBSERVATIONS =  8209    MEAN  =       0.

              * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

              : INDICATES CALIBRATION DURING THE HOUR
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RADIAN CORPORATION

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                 DIURNAL VARIATION OF TOTAL HYDROCARBONS(UG/M**3 X 10**-1)
                     TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                      HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  MEAN
DAY

  1     105  106  105  105  105  105  105  106  107  106  105  105  104  105  105  104  104  104  105  104  105  105  105  105       106
  2     105  105  105  105  104  104  105  105  105  104  104  105  104  104  104  104  105  105  105  104  104  104  104  104       105
  3     104  103  103  103  103  103  104  104  103  103  102  102  102  102  103  103  101  102  103  102  103  104  104  103       103
  4     104  104  103  104  104  104  104  104  104  104  105  105  106  106  106  105  101  101  101  101  102  102  102  103       104
  5     103  103  103  104  103  103  103  103  104  104  104  107  108  107  108  107  109  110  110  113  117  119  120  122       109
  6     125  127  134  134  136  139  140  143  146  150  151  149  149  161  141  123 :108  114  119  123  127  132  136  139       136
  7     142  144  145  147  148  149  151  155  160  162  140  137  140  139  137  132  128  127  129                                143
  8
  9
 10
 11                                                                    :    :103  103  106  106  105  105  104  104  104  103       105
 12     103  103  102  102  102  102  102  102  102  102  102  100  101  101  101  101  107  100   99  100  102  101  102  105       102
 13     104  105  104       :107  107  108  107  108  108  107  107  107  107:    :105  105  104  105  104  105  108  108  109       107
 14     110  110  111       :111  108  106  106  104  105  105  105  105  105            108  110  106  105  105  106  106  105       107
 15     105  105  106       :105  106  105  105  105  105  105  105  104  104  104  108  107  106  106  105  105  105  105  104       106
 16     104  104  109       :105  105  104  104  104  104  105  105  105  104  104  108  107  107  107  107  107  107  107  107       106
 17     106  106  107       :106  106  107  106  107  107  107  107  108  122  142  126  148                                          114
 18                                                               :    :    :    :    :
 19                                                                         86   99   98   98   99   99   99   99   99   99        98
 20      99  100   99   99   98   98   98   98   98   98  104  100  100  104  100   99   98   98   98   98   98   98   99   98        99
 21      98   98   98   98   98   98   98   99   99   99   98   98   98   98   98   99   99   98   99   98   99   98   99   99        99
 22      79  101  103  103  101  102  102  102  102  102  102  102  102  102  102  103  102  101  102  103  103  104  104  104       103
 23     104  104  104  104  106  106  106  105  105  104  105  106  106  105  106  105  103  103  103  103  103  103  103  105       105
 24     108  109  108  105  104  102  101  101  104   95  105 :103  102  104  102  102  102  103  103  101  101  102  102  102       104
 25     102  102  102  102  102  102  104  102  102  102  103  103  102  100  101  101  101  101  101  100  101  101  100  100       102
 26     101  101  100  100  100  101  101  101  101  101  101  100  101  101  101  101   98   91   82   86   79   77   77   84        96
 27      93   80   76   76   75   76   76   75   76   84   83   79   81   82   96 :104 :105  105  105   89   86   86   79   80        86
 28      71   78   77   77   79   78   82   98   80   93  100  105  106  104  107  106  109  108  107  107  107  107  107  107        97
 29     107  107  107  107  107  106  106  107  108  109  111  114  116  116  109  111  109  109  109  111  111  109  108  109       110
 30     110  112  109  110  109  109  108  109  109  111  113  116  117  117  115  114  112  110  109  109  109  109  108  109       111
 31     109  108  109  108  108  106  108  109  109  112  113  110  110  111  110  111  109  108  107  107  109  107  107  107       109
MEAN    106  105  106  105  106  106  106  107  107  108  107  107  108  109  109  108  107  105  105  104  104  104  104  105

                   TOTAL NUMBER OF OBSERVATIONS =  7145     MEAN  =     106.

       : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

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                 DIURNAL VARIATION OF METHANE(UG/M**3 X 10**-1)
                 TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                                 HOUR
        1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

  1    91  91  91  91  91  91  91  91  91  91  91  91  91  91  91  91  91  90  91  91  91  91  91  91    91
  2    91  91  91  91  91  91  91  91  91  92  92  92  92  92  91  92  92  92  91  92  92  92  91  91    92
  3    91  91  91  91  90  91  91  91  90  90  91  91  90  90  92  92  91  90  90  90  90  91  91  91    91
  4    91  91  91  91  91  91  91  91  91  91  91  91  92  92  92  92  94  94  93  93  93  93  93  93    92
  5    93  92  93  93  92  91  92  91  92  92  92  93  94  94  94  94  95  95  94  95  97  99  96  96    94
  6    96  95  95  95  95  95  94  92  96  94  94  94  93  93  93  94: 94  94  94  94  94  93  93  92    94
  7    93  93  93  93  93  93  93  93  93  93  95  93  93  92  93  92  92  92  91  92  92  91  91  91    93
  8    91  91  91  91  91  91  91  91  91  92  94  95  95  94  94  94  93  94  94  93  93  93  93  94    93
  9    95  93      94  94  94  93  93 101  93      94  93  92  92  93  93  93  93  93  93  92  92  92    94
 10    92  92  92  92  92  91  92  91  91  91  91  91  91  91  91  91  91  90  91  91  91  91  91  91    92
 11    91  91  91  91  91  91  91  91  91  91  92  92  92:    : 90  89  89  88  89  89  88  88  88  88    91
 12    88  88  88  88  88  88  89  89  89  89  89  89  88  88  89  89  91  90  89  89  90  90  90  91    89
 13    91  91  91    : 92  91  92  91  91  91  91  92  90  91:    : 93  92  91  91  91  91  92  92  92    92
 14    92  92  93    : 93  92  91  91  90  90  90  90  90  90          92  92  88  90  90  89  89  89    91
 15    89  89  90    : 91  91  90  90  90  90  90  91  91  91  91  91  91  91  91  91  90  91  90  90    91
 16    90  90  89    : 91  91  91  91  91  91  91  91  91  91  89  90  90  90  90  91  90  90  90  90    91
 17    90  90  90    : 90  89  90  90  91  91  91  91  91  83  75  82  96                                89
 18                                                :   :   :   :   :
 19                                                            81  93  92  92  91  91  91  91  90  90    91
 20    91  90  90  90  90  90  90  90  90  90  90  90  90  90  89  89  90  91  90  89  89  89  89  88    90
 21    88  88  88  88  88  88  89  89  88  88  88  88  88  87  87  87  88  88  88  88  88  87  87  87    88
 22    88  89  91  90  89  89  89  89  89  89  88  88  88  88  88  89  88  88  88  89  88  90  90  89    89
 23    89  89  89  90  91  91  90  89  89  88  89  89  89  88  89  88  87  86  87  87  86  87  87  88    89
 24    90  90  91  89  88  87  86  86  85  85  82: 84  81  82  85  85  84  84  84  83  83  83  83  82    86
 25    83  83  83  83  83  83  83  82  82  82  82  82  82  83  82  82  82  81  81  81  81  80  80  80    82
 26    80  80  79  79  79  79  79  79  79  79  80  79  79  79  79  79  78  78  78  78  78  77  77  77    79
 27    75  76  76  76  76  76  75  75  76  76  77  76  76  76  77: 79: 79  80  80  79  80  78  79  78    78
 28    79  78  77  77  78  77  78  78  78  78  78  78  79  78  77  78  77  78  78  78  77  77  77  77    78
 29    75  76  76  76  75  76  76  75  75  75  75  76  76  76  75  75  75  76  76  77  76  74  74  74    76
 30    74  73  73  72  72  71  71  71  70  71  71  72  72  71  70  69  69  69  68  68  67  67  67  67    71
 31    65  67  66  65  65  65  64  64  64  64  65  65  65  63  63  63  63  63  62  62  62  61  61  60    64
 MEAN  88  88  88  87  88  87  87  87  87  87  87  88  87  87  86  87  88  87  87  87  87  87  87  87

                  TOTAL NUMBER OF OBSERVATIONS =  8196     MEAN  =      87.

         : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

DIURNAL VARIATION OF NON-METHANE HYDROCARBONS(UG/M**3 X 10**-1)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	14	14	14	14	14	14	15	15	16	15	14	14	14	14	14	14	13	14	14	13	14	14	14	14	15
2	15	14	14	13	13	13	13	13	13	12	13	13	12	12	13	12	13	12	13	12	13	12	12	12	13
3	12	12	12	12	13	13	13	13	13	13	12	11	12	11	10	10	10	12	13	12	13	14	13	13	13
4	12	12	12	13	14	13	13	13	13	14	14	14	14	13	14	13	7	7	8	8	10	9	9	10	12
5	9	10	10	10	11	12	11	12	12	11	12	13	13	12	13	13	15	15	16	17	20	20	23	26	15
6	29	32	35	39	42	44	46	51	50	55	55	56	55	67	48	29:	14	19	24	29	34	39	43	46	41
7	48	50	52	53	55	56	58	62	66	69	45	43	47	47	44	39	36	35	37						50
8																									
9																									
10																									
11													:	:	13	14	17	18	17	16	16	15	15	15	16
12	14	15	14	14	14	14	13	14	14	13	14	11	12	12	12	11	16	10	10	11	12	11	12	15	13
13	14	13	13	:	15	16	16	16	17	17	16	15	17	16:	:	12	12	13	14	14	14	16	16	17	15
14	17	17	18	:	17	16	15	16	15	15	15	16	15	16			16	18	18	15	16	17	17	16	17
15	17	16	16	:	14	16	15	15	15	15	15	14	14	13	14	17	16	16	15	15	15	15	14	14	15
16	10	14	20	:	13	14	13	13	14	13	14	14	14	14	15	18	17	17	17	17	17	17	18	17	16
17	15	17	17	:	16	17	17	16	16	16	16	17	17	23	67	43	51								24
18												:	:	:	:	:									
19															5	6	6	7	8	8	8	8	8	9	8
20	8	10	9	8	8	8	8	8	8	8	9	10	10	10	10	10	7	7	8	9	9	9	10	9	9
21	10	10	10	10	11	10	9	10	10	10	10	9	10	11	10	11	11	10	11	11	11	11	11	12	11
22	12	12	12	13	12	12	12	13	13	13	14	14	14	14	14	14	14	13	14	14	15	15	14	15	14
23	15	15	15	15	15	16	16	16	16	16	15	17	17	17	17	17	16	16	16	16	16	16	16	17	17
24	18	18	18	17	16	15	15	16	19	16	22:	19	21	22	17	17	18	20	18	18	18	19	19	20	19
25	19	19	19	19	19	19	22	20	20	21	20	21	20	17	19	19	19	19	19	19	20	20	19	20	20
26	21	21	21	21	21	22	21	21	22	22	21	20	21	21	21	21	20	13	4	8	1	0	0	7	17
27	16	3	0	0	0	0	0	0	0	8	6	3	5	6	19:	25:	25	25	25	10	8	7	0	1	8
28	0	0	0	0	1	1	4	20	3	15	22	26	27	26	30	29	32	30	28	29	30	29	30	30	19
29	31	31	31	31	31	31	31	32	33	34	37	39	40	40	34	36	34	34	33	34	35	35	35	35	34
30	36	39	36	37	36	37	37	38	39	39	42	44	45	46	44	45	44	41	41	41	41	42	41	42	41
31	42	42	43	42	42	43	43	44	45	47	48	45	45	48	47	48	46	45	45	45	48	46	46	47	46
MEAN	19	19	19	20	19	19	20	21	21	22	21	21	22	22	23	21	21	19	19	18	19	19	19	20	

TOTAL NUMBER OF OBSERVATIONS = 7143 MEAN = 20.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

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              DIURNAL VARIATION OF CARBON MONOXIDE(UG/M**3 X 10**-1)
                   TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                          HOUR
         1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

  1
  2
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13                                                                 17  71  19  19  21  23  23  25  26    28
 14     27  27  29   : 30  30  32  32  33  34  37  36  35  37          42  34  44  33  32  51  32  32    35
 15     31  32  32   : 33  33  33  33  33  35  34  34  37  33  32  31  70  32  30  30  29  29  28  28    34
 16     29  29  29   : 30  29  29  30  29  30  28  30  30  30  29  29  30  30  28  27  29  28  28  28    30
 17     30  28  28   : 30  29  31  30  32  30  31  30  92  19  18  20  63                                34
 18                                                 :   :   :   :   :
 19                                                             30  30  31  29  29  28  29  28  28  31    30
 20     29  31  30  29  32  29  30  46  29  31  33  33  29  30  32  31  51  33  32  30  30  28  30  30    32
 21     28  29  30  30  29  29  26  32  29  30  32  31  30  29  27  29  30  29  28  27  29  28  26  27    29
 22     28  30  32  34  33  33  33  32  32  32  42  31  31  34  32  33  33  33  33  34  34  32  31  32    33
 23     30  30  32  29  31  32  33  34  33  33  33  43  31  33  34  33  35  33  32  31  32  32  30  31    33
 24     29  30  32  31  29  30  31  32  29  71  72: 26  28  32  33  28  26  26  25  24  25  25  25  25    32
 25     25  24  25  24  25  24  24  25  25  25  25  25  25  27  28  26  25  24  25  24  24  25  24  24    25
 26     25  25  24  25  24  24  24  24  24  25  25  24  37  25  26  25  25  24  26  31  36  39  42  44    28
 27     45  48  49  51  53  54  53  53  56  64  62  57  58  57  56: 26: 26  25  25  24  24  25  25  25    44
 28     24  25  24  23  24  24  24  24  24  25  25  23  23  23  24  23  25  24  25  25  25  27  24  23    25
 29     24  23  23  24  24  24  24  24  24  24  26  25  25  25  24  24  23  24  23  23  23  23  23  23    24
 30     28  35  38  41  44  46  48  49  51  53  56  55  55  54  55  54  55  54  52  52  51  52  52  52    50
 31     51  52  50  51  51  50  50  49  51  50  51  31  25  25  24  25  25  26  25  25  26  26  26  26    38
 MEAN    31  32  32  33  33  33  33  35  34  37  30  34  37  33  31  29  38  30  30  29  30  31  30  30

                         TOTAL NUMBER OF OBSERVATIONS =  4652     MEAN  =      33.

                : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

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                              DIURNAL VARIATION OF OZONE(UG/M**3)
                        TRAILER NO. - 23   PERIOD( 1/ 1/77 TO  1/31/77)

                                               HOUR
        1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24 MEAN
DAY

  1    72   70   71   70   71   68   66   71   71   73   77   77   77   76   76   77   79   78   77   76   75   74   71   70    74
  2    69   70   70   68   65   67   67   67   67   68   68   69   70   72   72   71   69   69   69   69   68   69   68   68    69
  3    69   69   70   69   68   67   67   68   68   69   69:  70   71   68   63   52   64   66   71   76   72   69   68   67    69
  4    65   64   63   61   61   59   61   59   58   61   68   70   72   73   72:  70   68   66   63   62   63   61   57   53    64
  5    53   51   54   58   61   59   61   53   54   59   59   60   62   64:  64   63   56   56   63   64   63   62   62   62    60
  6    62   62   63   64   65   65   54   64   63   66   62   71   75   77   76     : 73   71   67   69   70   72   76   77    69
  7    74   75   74   75   73   72   72   72   73   74:  74:  76   78   79   78   79   78   77   75   73   72   72   73   72    75
  8    74   70   69   67   66   70   71   70   66   64   64   63   62   65   63   64   65   64   64   67   67   66   65   64    67
  9    64   64        64   65   66   68   68   67   67        72:  73   74   74   73   72   72   72   72   72   74   75   73    71
 10    74   74   75   75   74   74   74   74   75   75   77   78   79   79   79   78   79   80   81   81   80   80   79   78    78
 11    77   76   75   75   73   73   74   75   72   74   77   80   83:    : 78   78   77   77   77   76   77   76   77   77    77
 12    77   77   76   76   75   74   73   73   74   74   74   74   74   75   75   75   76   82   84   85   87   87   88   88    79
 13    88   88   86   81:  78   79   79   76   75   74   79   81   83   82:    : 76   76   78   74   74   75   72   69   68    78
 14    69   71   70   71:  73   73   69   71   68   66   71   77   78   79             83   81   75   81   79   79   80   82    75
 15    82   83   82   82:  82   83   81   80   80   82   83   84   84   84   81   82   83   81   79   81   79   80   80   80    82
 16    84   81   80   76:  74   73   73   71   69   67   75   75   73   75   76   72   67   65   64   62   66   65   68   74    72
 17    72   75   75   75:  74   75   77   76   74   70   75   77   67:  71   73   74   72   70   69   70   62   62   62   61    72
 18    61   60   61   61   62   63   60   62   55   50          : 71:  72   72   73   74   72   70   71   71   72   72   69    67
 19    72   72   74   71   70   70   66   66   65   65   69   70   73   75   74   68   69   70   67   64   66   67   67   67    69
 20    71   70   66   72   72   71   59   63   66   64   72   73   75   76   76   74   71   67   66   66   69   70   72   72    71
 21    72   70   70   72   70   72   75   77   76   72   71:  72   79   79   78   79   76   77   75   73   75   72   70   70    74
 22    71   74   75   74   65   66   58   62   66   66   68   70   69   70   69   63   59   54   54   53   45   45   47   49    62
 23    50   54   57   48   43   41   40   36   41   51   54   56   64   65   66   64   61   58   57   46   48   41   33   35    51
 24    44   42   54   50   53   63   62   62   58   56:  58   71   73   74   73   73   72   70   62   61   63   61   64   63    62
 25    64   66   66   67   67   65   66   66   62   63   63   72   79:  79   79   81   80   76   76   75   74   74   75   73    71
 26    72   71   72   73   71   68   67   65   67   73   75:  76   76   74   74   73   72   73   73   71   71   69   69   69    72
 27    68   65   64   63   63   63   62   64   59     :  75:  74   74   74   73   72   72   72   70   71   69   70   70   69    69
 28    69   68   69   69   70   67   67   65   66   65   69:  65:  68   69   70   70   70   66   64   64   64   66   64   65    67
 29    69   70   70   70   70   66   65   65   61   61   68   73   75   75   74   72   72   70   66   65   64   62   61   63    68
 30    63   62   62   61   62   59   62   63   58   62   70   75   77   77   78   79   78   74   69   69   71   71   69   70    69
 31    74   71   72   72   74   74   74   74   63   70   71:  77   77   77   76   76   74   73   73   70   71   69   70   72    73
 MEAN   69   69   70   68   69   68   68   68   66   67   70   73   74   75   74   73   73   72   70   70   70   69   69   69

                    TOTAL NUMBER OF OBSERVATIONS =   8700     MEAN  =      70.

        : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

HOURLY TOTAL PRECIPITATION(HUNDREDTHS OF INCHES)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0	6
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0	

TOTAL NUMBER OF OBSERVATIONS = 8849 TOTAL = 6.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 8 FEET(MPH)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	4	6	4	5	1	1	2	3	2	12	12	12	11	12	13	12	10	11	9	10	8	8	9	8
2	9	10	10	10	9	11	11	9	10	12	12	11	12	12	12	12	8	8	9	7	5	15	15	10	11
3	10	8	9	6	5	5	6	8	9	9	13	15	11	13	10	12	4	2	8	2	3	4	9	8	8
4	9	6	4	1	1	1	1	1	2	1	4	7	7	6	5	4	4	1	1	1	0	0	0	0	3
5	0	0	0	1	0	0	0	0	0	0	0	0	1	2	1	3	3	1	2	1	1	1	1	0	1
6	0	1	0	0	1	0	1	0	0	0	1	1	3	3	4	5	5	1	2	1	1	1	1	0	2
7	1	1	2	2	3	3	4	3	3	2	5	8	11	12	12	13	6	4	4	2	2	3	3	1	5
8	2	1	0	1	2	2	2	3	1	2	3	2	3	4	6	5	6	7	6	6	6	5	3	2	4
9	2	2		2	1	0	0	1	0	0		1	0	1	2	5	8	10	10	3	1	3	3	1	3
10	2	3	4	2	2	2	5	7	8	13	13	11	10	11	9	10	7	4	5	3	1	1	2	2	6
11	1	0	1	1	0	1	0	0	0	1	1	2	1	3	4	4	3	4	3	2	3	2	3	2	2
12	1	3	3	3	3	2	2	2	5	4	8	9	9	13	12	10	2	1	4	2	1	2	2	1	5
13	1	2	1	0	1	2	0	0	0	0	2	2	4	2	5	2	1	1	2	2	1	2	2	1	2
14	1	0	0	0	0	2	2	0	0	0	0	2	2	4			4	2	1	2	0	0	1	1	2
15	2	3	3	7	8	9	7	5	7	9	11	12	8	5	5	3	3	2	2	1	1	2	2	3	5
16	3	3	5	4	2	2	2	2	2	2	5	2	0	4	3	2	0	1	0	1	2	2	1	1	3
17	2	0	0	1	1	2	1	1	1	1	1	2	2	3	2	2	1	2	2	1	1	1	1	1	2
18	1	2	1	2	1	1	1	1	1	1		1	6	6	5	6	7	6	2	2	2	2	3	3	3
19	3	1	3	2	3	3	1	1	1	2	2	2	2	4	3	2	0	1	1	1	0	0	0	1	2
20	0	1	2	1	1	2	1	2	1	1	2	0	2	2	1	6	4	4	2	3	1	2	1	2	2
21	1	1	0	1	1	1	1	1	1	2	1	1	5	7	6	6	3	2	2	1	1	1	2	3	3
22	3	1	3	3	1	2	1	2	2	1	0	1	1	1	1	2	0	0	0	0	1	1	1	0	2
23	0	1	2	1	1	1	1	1	1	1	1	2	1	3	4	4	2	1	0	1	0	0	0	0	2
24	0	0	1	1	2	1	1	1	0	1	0	2	2	3	2	2	1	1	2	4	1	1	1	1	2
25	1	1	1	1	1	2	1	0	1	1	1	1	6	8	8	7	7	4	4	1	1	2	2	2	3
26	1	2	3	2	2	1	1	1	1	3	7	9	10	10	11	9	10	8	7	6	2	1	1	1	5
27	2	1	1	1	2	2	2	1	1	3	3	5	4	5	8	8	8	6	6	3	0	2	1	1	4
28	0	0	1	0	1	1	2	2	1	1	1	3	5	6	6	5	5	5	3	3	1	1	3	0	3
29	1	1	0	1	1	2	2	2	2	2	1	2	2	3	6	7	6	1	0	0	1	1	0	1	2
30	1	1	0	0	1	2	1	0	1	0	1	2	2	3	2	1	2	0	2	2	1	1	1	1	2
31	2	1	1	2	2	1	1	2	2	1	3	2	4	6	4	6	4	3	2	3	2	2	2	4	3
MEAN	3	2	3	2	2	2	2	2	3	3	4	5	5	6	6	6	5	4	4	3	2	3	3	3	

TOTAL NUMBER OF OBSERVATIONS = 8840   MEAN = 4.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND SPEED AT 30 FEET(MPH)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	8	7	9	6	8	2	3	4	4	3	15	16	15	15	16	17	16	13	14	12	14	11	11	12	11
2	12	14	13	13	12	15	15	13	14	15	16	15	16	15	16	16	11	11	12	10	8	19	19	13	14
3	14	11	12	9	7	7	9	11	13	12	18	19	15	17	13	15	7	3	11	4	6	6	13	12	12
4	13	8	7	3	3	3	2	4	3	3	5	9	10	9	7	6	6	2	2	3	1	2	1	1	5
5	0	1	1	2	2	0	1	1	0	1	0	0	2	2	3	5	4	3	3	2	3	3	2	1	2
6	0	1	1	0	3	1	3	0	2	1	2	1	4	4	5	7	7	4	5	2	0	1	2	2	3
7	2	2	3	4	7	5	5	5	5	3	7	11	14	16	16	17	8	7	6	4	4	6	5	3	7
8	4	3	2	3	3	4	5	6	3	4	4	3	5	6	8	7	9	10	9	9	8	7	5	5	6
9	4	4		3	2	0	0	1	1	1		1	1	2	3	7	11	13	13	5	3	5	5	3	4
10	4	6	7	3	4	4	8	10	11	16	17	14	14	14	12	14	10	6	7	5	3	3	4	4	9
11	2	1	2	2	1	2	1	1	1	3	2	2	2	4	5	5	5	7	4	4	6	4	4	4	4
12	3	5	4	4	5	4	3	3	7	5	11	12	12	17	16	13	4	3	6	4	2	3	3	3	7
13	3	3	3	2	2	3	1	1	0	2	3	3	6	3	7	4	2	2	3	3	2	3	3	3	3
14	1	0	0	0	1	3	3	0	1	1	1	3	3	5			6	3	2	4	2	1	2	3	2
15	4	6	5	10	11	13	11	9	10	12	14	15	10	7	7	4	5	5	5	3	3	3	3	5	8
16	5	5	7	7	3	3	4	4	3	4	7	3	1	6	5	4	1	2	1	3	3	4	3	2	4
17	4	1	1	2	2	4	2	3	3	1	3	4	3	4	3	3	3	3	3	2	1	2	1	2	3
18	2	3	1	2	2	2	2	1	2	3		2	9	8	7	8	8	8	3	3	3	4	5	4	4
19	4	2	5	5	4	5	2	1	1	3	3	3	3	5	5	3	2	1	3	3	0	0	0	1	3
20	0	4	5	3	3	3	2	3	2	2	3	2	3	2	2	8	7	6	4	6	3	3	3	4	4
21	2	2	1	2	3	1	2	3	2	4	3	2	7	9	8	8	5	3	4	3	3	4	3	5	4
22	6	3	5	5	3	3	3	4	3	3	1	2	2	3	2	4	1	1	1	0	2	3	2	2	3
23	2	3	3	2	2	2	2	3	3	3	2	4	1	4	6	6	4	4	1	2	0	0	1	0	3
24	1	2	2	3	4	2	3	2	1	1	1	3	3	5	3	3	3	2	4	7	2	1	2	3	3
25	3	3	3	2	1	3	2	1	2	1	3	2	7	10	10	10	9	7	7	2	2	4	4	4	5
26	2	3	5	4	4	2	3	3	2	4	9	11	13	13	15	12	13	11	10	9	3	2	3	3	7
27	4	1	2	3	4	4	3	2	2	4	5	6	5	7	10	10	12	9	9	6	2	2	2	2	5
28	1	1	1	1	3	1	4	3	2	2	2	3	7	8	6	7	7	7	6	5	2	1	4	1	4
29	2	1	1	3	2	4	4	4	4	3	2	3	3	5	8	10	8	3	1	2	1	3	1	1	4
30	1	1	1	1	3	2	1	1	1	1	3	3	3	4	3	2	4	0	4	4	1	1	2	1	2
31	2	3	2	4	3	3	1	4	3	2	4	3	5	8	6	8	5	5	3	6	4	4	4	8	5
MEAN	4	4	4	4	4	4	4	4	4	4	6	6	7	8	8	8	7	6	6	5	4	4	5	4	

TOTAL NUMBER OF OBSERVATIONS = 8840 MEAN = 5.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND SPEED AT 100 FEET(MPH)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	12	10	12	9	11	3	4	5	5	3	16	18	18	17	19	20	20	16	18	16	18	15	15	16	14
2	17	18	17	17	16	19	19	18	18	19	19	17	18	18	19	19	14	13	15	12	10	22	22	15	17
3	17	14	15	11	9	8	11	13	15	15	20	22	17	20	15	18	8	4	13	5	8	9	18	17	14
4	17	12	10	6	6	4	4	8	6	4	7	11	11	10	8	7	7	3	3	5	0	3	1	1	7
5	0	1	1	2	3	0	2	1	0	1	0	1	2	3	3	6	6	4	4	3	5	4	3	1	3
6	0	0	1	2	6	3	2	0	0	1	3	2	6	5	6	8	9	5	6	3	1	0	2	3	4
7	2	3	5	6	9	7	8	7	8	4	8	13	17	18	19	20	10	8	9	5	5	8	7	4	9
8	8	4	4	4	3	4	6	5	4	4	5	3	5	7	9	8	10	12	11	11	11	10	7	7	7
9	7	5		4	1	1	0	2	2	2		2	1	2	3	8	13	16	17	6	4	6	7	3	6
10	5	7	9	5	5	5	10	13	14	19	20	16	16	16	14	16	12	9	10	7	4	3	6	2	11
11	3	1	2	4	3	2	1	0	1	3	2	3	3	6	6	6	7	9	6	5	7	6	4	4	4
12	3	6	5	6	7	6	4	5	9	7	13	14	14	20	20	15	5	4	8	4	3	3	4	4	8
13	3	3	2	2	2	5	2	1	0	3	4	4	6	3	8	5	3	2	3	5	4	3	2	2	4
14	1	0	0	1	0	5	2	2	3	2	1	3	3	5			7	3	2	3	2	3	6	5	3
15	7	10	8	16	16	17	16	13	13	14	16	17	12	8	8	5	5	6	8	6	4	3	5	5	10
16	6	8	11	11	4	3	6	7	4	6	9	4	2	6	5	5	1	3	1	4	4	3	3	1	5
17	3	4	5	3	2	4	4	7	6	2	3	5	4	5	3	4	3	5	5	3	1	2	2	0	4
18	2	1	1	1	2	2	2	2	2	4		2	10	9	8	9	10	11	3	3	3	4	8	4	5
19	6	3	10	8	4	7	2	2	2	3	3	3	3	6	5	3	3	1	3	1	0	0	0	1	4
20	0	0	3	3	2	3	2	4	3	2	3	2	4	2	2	9	8	9	5	7	4	4	3	5	4
21	2	1	2	3	2	1	2	4	2	6	3	2	8	10	10	10	6	4	5	5	4	4	4	6	5
22	8	5	7	6	5	5	5	6	4	4	1	3	3	3	3	4	1	1	1	0	3	4	2	2	4
23	2	4	4	3	3	3	3	3	3	3	2	4	2	5	7	7	5	6	3	1	0	1	2	1	4
24	2	1	2	3	3	3	3	2	1	1	1	3	4	5	4	4	3	4	4	11	6	2	2	2	4
25	4	4	2	2	2	3	3	2	3	2	3	2	8	11	12	12	12	10	11	3	2	3	4	5	6
26	3	6	5	5	4	3	2	2	2	5	11	12	15	15	17	14	16	15	14	12	4	2	3	3	8
27	4	3	3	3	4	4	5	2	2	6	5	7	6	7	11	12	14	12	12	9	3	2	2	2	6
28	1	3	1	1	4	2	5	3	5	2	1	4	8	9	9	8	9	11	11	8	2	1	5	1	5
29	1	1	0	4	2	4	5	4	5	3	2	4	3	6	9	11	10	6	1	4	1	2	1	1	4
30	0	0	0	0	2	1	0	0	1	1	3	4	3	5	4	3	4	1	4	6	2	2	2	2	3
31	2	4	1	3	4	2	2	3	4	2	3	3	6	9	6	9	7	6	3	6	6	6	6	11	5
MEAN	5	5	5	5	5	5	5	5	5	5	7	7	8	9	10	10	8	8	8	6	5	5	5	5	

TOTAL NUMBER OF OBSERVATIONS = 8838 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 200 FEET(MPH)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	15	14	15	12	16	5	5	5	5	4	18	20	19	18	20	22	22	19	23	20	22	19	19	21	16
2	21	23	21	21	21	23	23	18	21	21	20	18	20	19	21	21	16	15	18	14	12	26	25	18	20
3	20	15	16	12	10	9	13	15	17	16	22	24	19	21	16	19	9	5	15	6	10	11	22	20	16
4	20	16	13	8	8	6	4	9	8	5	7	11	11	11	9	8	8	3	3	6	0	1	0	0	8
5	0	1	1	1	1	0	2	1	0	1	0	0	2	3	3	6	6	5	4	4	6	6	4	1	3
6	0	0	0	2	4	2	2	0	0	2	2	2	6	6	7	8	10	8	5	3	1	0	2	6	4
7	4	6	7	8	9	7	10	9	10	4	8	14	17	19	21	21	10	11	10	5	4	9	9	6	10
8	8	5	3	4	1	3	4	4	4	5	4	3	5	7	9	8	10	13	12	12	11	12	8	9	7
9	8	8		4	1	0	0	0	1	2		2	1	2	3	8	15	20	21	9	5	9	8	4	6
10	5	8	12	6	7	8	13	17	18	22	22	18	17	18	14	18	15	11	14	10	6	6	6	3	13
11	6	1	4	8	0	6	1	0	0	2	1	2	3	5	6	6	8	11	8	4	8	4	2	1	5
12	1	6	5	8	8	6	6	6	12	8	15	14	15	22	22	17	7	5	9	5	3	4	5	4	9
13	4	5	1	3	1	4	2	1	1	2	4	4	6	4	8	5	3	2	4	4	3	3	1	0	4
14	0	0	0	0	0	6	4	4	5	0	1	2	3	6			7	4	3	3	3	7	9	7	4
15	12	14	11	17	20	20	18	16	17	15	16	16	12	9	8	6	4	3	8	8	4	2	7	4	12
16	6	8	15	15	6	3	6	7	5	6	10	4	1	6	5	5	1	2	2	4	6	4	2	1	6
17	2	6	11	8	4	3	8	10	10	3	4	4	4	5	3	4	4	6	7	4	0	3	3	1	5
18	1	2	1	0	2	1	2	3	5	4		3	10	9	8	10	12	16	5	2	2	3	12	5	6
19	7	5	14	10	4	6	3	2	1	3	4	3	3	6	5	3	3	1	3	2	1	0	0	0	4
20	0	1	1	2	3	1	2	6	7	4	3	2	5	3	3	10	10	12	4	6	2	3	2	5	4
21	3	0	3	3	2	2	2	5	2	7	2	1	8	11	10	11	7	5	5	6	4	2	3	6	5
22	9	6	9	6	7	7	7	8	6	4	2	3	3	3	3	4	1	0	2	2	5	4	2	3	5
23	3	4	4	3	3	3	3	3	3	3	2	4	2	5	7	7	6	7	4	2	1	3	3	1	4
24	2	2	3	4	2	4	1	2	5	3	1	4	5	6	4	4	4	5	3	12	10	6	3	2	4
25	1	1	0	3	4	1	1	0	1	2	3	2	8	12	13	12	14	13	15	6	4	1	3	3	6
26	5	7	4	5	4	7	5	3	3	7	12	12	16	17	19	15	19	19	19	16	4	3	2	3	10
27	4	9	0	2	3	5	8	5	3	7	5	8	7	8	12	12	15	15	17	13	5	4	2	5	8
28	4	7	4	3	6	5	4	4	8	3	1	4	8	9	9	8	9	14	12	9	3	1	5	2	6
29	0	0	1	4	3	3	3	3	6	2	2	4	3	6	10	12	11	7	4	5	2	1	2	2	4
30	0	0	1	1	2	1	0	1	0	1	3	4	3	6	4	3	4	1	3	5	6	6	5	7	3
31	0	4	2	2	2	3	2	1	2	2	3	3	6	10	7	10	8	7	2	5	6	7	8	12	5
MEAN	6	6	7	5	6	6	6	6	6	6	7	8	8	10	10	11	9	9	9	7	6	6	6	6	

TOTAL NUMBER OF OBSERVATIONS = 8838 MEAN = 7.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF WIND DIRECTION AT 8 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	190	186	187	188	184	139	83	220	114	151	191	199	204	210	209	207	209	205	199	198	198	203	198	196	189
2	195	201	201	196	194	197	193	198	198	199	197	197	196	207	201	200	191	192	186	186	170	189	176	170	193
3	177	172	165	163	151	147	157	161	160	153	169	177	181	182	188	175	173	192	212	293	225	217	202	203	181
4	204	202	211	226	209	208	196	202	205	232	282	290	280	276	240	195	212	33	132	306	147	171	202	278	221
5	192	224	178	202	206	167	194	74	205	263	15	356	309	308	296	295	291	284	255	268	279	259	251	207	251
6	183	227	189	228	154	155	225	171	215	99	11	303	221	196	194	201	195	171	108	139	208	223	109	71	183
7	55	83	100	113	155	162	138	109	141	165	198	198	211	212	199	195	191	163	127	104	126	137	138	107	148
8	105	120	126	86	91	147	142	179	268	271	284	314	341	301	304	315	302	314	297	292	291	299	281	268	288
9	281	250		229	209	199	211	166	148	124		105	32	75	57	200	196	187	190	150	99	172	161	67	165
10	92	140	154	99	101	112	175	185	182	187	191	191	188	188	186	190	187	163	173	117	95	109	97	100	151
11	189	89	154	124	33	24	331	193	75	90	19	9	11	224	227	196	190	168	104	104	131	109	128	147	121
12	145	139	106	87	106	73	85	109	182	181	192	202	201	209	205	212	196	252	162	132	38	198	130	123	155
13	114	76	84	114	80	123	107	82	90	71	114	90	242	263	321	53	136	179	218	215	230	237	215	205	135
14	204	210	215	284	159	178	217	90	196	28	21	7	256	342			303	260	208	161	93	93	150	165	194
15	154	189	165	178	173	176	176	176	189	181	177	189	185	189	272	201	138	160	183	190	147	173	181	158	178
16	158	144	188	189	139	138	181	197	142	141	212	201	225	171	143	309	304	172	127	231	240	228	220	158	184
17	218	172	219	77	74	113	120	148	156	59	93	99	70	70	116	110	96	129	119	130	199	102	235	228	125
18	300	212	213	211	214	196	204	163	182	61		107	210	200	203	202	192	193	47	105	101	125	162	79	175
19	145	79	184	167	84	142	45	148	101	91	59	18	315	291	286	317	16	168	215	226	186	172	207	191	152
20	183	213	220	157	164	147	116	122	47	46	39	319	261	240	234	198	195	201	83	143	118	121	179	115	160
21	123	252	115	104	194	112	176	152	90	127	106	5	208	209	211	224	208	173	156	153	174	185	216	217	169
22	219	188	188	155	110	116	107	128	130	95	72	175	175	160	90	18	301	281	221	163	227	251	271	283	170
23	279	289	298	300	296	296	292	280	281	282	267	306	307	355	11	354	309	289	281	225	140	236	299	206	289
24	352	126	201	245	152	155	92	117	63	56	25	296	24	360	21	2	306	295	217	218	173	65	81	66	62
25	137	101	159	247	117	101	157	68	100	94	18	343	228	211	216	221	205	196	193	115	70	84	116	125	137
26	131	96	134	130	96	69	68	64	69	168	188	192	202	197	206	201	198	201	198	174	90	85	99	92	140
27	127	40	93	85	129	145	112	84	95	186	204	214	214	230	200	208	212	205	197	192	100	65	116	120	151
28	49	169	116	125	149	56	134	107	191	61	141	212	277	270	265	249	216	206	210	211	101	175	215	178	172
29	185	192	128	196	84	108	108	172	190	75	26	346	322	308	343	5	10	360	229	161	212	212	128	235	158
30	188	226	167	226	201	238	205	224	15	136	72	32	24	12	10	55	6	234	212	211	159	56	63	75	146
31	75	110	81	113	135	190	141	137	73	59	15	357	218	204	215	201	193	170	133	158	116	113	117	157	136
MEAN	163	167	164	165	145	145	149	148	145	121	88	269	239	230	225	218	215	202	183	177	153	163	169	158	

TOTAL NUMBER OF OBSERVATIONS = 8839 MEAN = 171.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

	HOUR																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	194	185	187	139	189	150	81	212	119	143	191	201	204	213	210	209	210	207	201	199	202	207	200	198	190
2	193	201	201	196	195	199	195	207	198	201	197	198	197	206	202	200	195	193	186	188	177	191	179	171	194
3	179	172	166	165	153	148	159	163	161	152	171	179	185	183	189	176	175	208	215	295	226	221	206	207	183
4	207	206	214	226	216	213	200	202	212	232	273	287	279	275	240	197	214	20	125	301	154	166	201	290	224
5	247	232	181	190	199	185	198	123	224	254	317	349	297	302	293	294	289	281	256	264	275	264	255	217	252
6	158	221	165	184	136	143	210	181	205	112	31	273	219	198	196	204	195	171	105	163	221	234	118	84	177
7	74	119	113	130	152	163	146	122	147	170	199	201	213	214	202	196	194	171	137	109	137	147	141	118	155
8	107	127	132	100	91	149	152	181	263	268	281	293	320	301	305	316	302	314	299	294	294	298	284	273	280
9	284	262		246	217	198	212	151	162	124		89	75	75	59	188	197	190	191	171	117	199	167	87	169
10	142	141	165	115	120	131	181	187	186	187	193	192	191	189	187	192	191	183	179	143	121	133	113	109	161
11	188	144	213	147	88	10	16	186	86	95	19	6	355	241	226	195	193	169	122	110	128	106	133	150	135
12	157	143	106	101	116	84	96	133	192	184	196	204	203	211	207	216	201	245	172	142	77	212	139	139	163
13	149	101	90	123	94	123	117	107	118	85	114	105	240	241	322	52	141	183	218	205	217	243	202	209	148
14	144	216	234	85	138	158	207	139	186	35	7	360	227	345			301	267	218	164	107	142	167	173	172
15	167	192	150	177	172	177	176	177	187	181	178	190	185	186	274	213	143	162	187	187	168	174	186	166	180
16	160	155	188	193	162	133	182	195	151	148	215	204	246	174	146	313	280	181	143	237	247	229	211	149	189
17	203	164	175	116	94	122	150	164	166	76	94	99	76	72	118	113	101	137	128	135	176	96	246	218	132
18	306	214	190	211	222	168	193	163	178	83		104	210	200	205	204	194	195	61	115	108	127	168	91	171
19	155	142	185	173	91	146	358	100	101	94	62	25	268	293	282	310	6	152	178	214	182	147	204	185	150
20	163	208	211	151	158	146	142	143	9	57	43	235	252	217	250	200	199	197	85	142	120	125	172	128	165
21	129	270	82	107	193	97	159	152	110	137	134	6	209	212	212	224	211	185	155	154	171	172	194	205	167
22	213	184	194	157	114	121	116	137	134	99	84	190	184	173	93	13	305	278	209	199	229	251	267	277	178
23	273	284	291	292	289	288	296	277	276	276	262	304	298	335	344	329	329	329	329	329	329	329	329	329	305
24	329	329	329	329	329	329	329	329	329	329	328	297	31	3	29	321	315	306	210	204	171	97	88	76	335
25	145	103	155	180	125	108	158	336	110	105	19	313	228	213	219	222	206	200	195	136	93	95	129	127	149
26	141	124	133	136	108	103	94	83	86	175	191	193	203	200	209	203	200	202	201	175	94	102	109	106	149
27	136	155	128	103	134	118	136	108	102	183	207	213	211	228	201	210	216	209	199	181	117	94	125	140	162
28	65	138	101	142	164	111	117	119	191	69	124	252	281	271	262	253	220	206	202	192	110	169	200	163	170
29	179	160	85	191	87	117	116	162	158	76	20	330	213	254	336	355	6	360	275	120	196	211	125	308	137
30	204	202	172	266	187	253	186	120	332	144	67	42	23	331	24	53	15	260	187	191	131	115	90	117	139
31	100	132	102	118	136	195	157	142	91	66	21	357	216	205	216	202	196	176	133	155	124	115	130	160	144
MEAN	165	174	161	160	148	148	158	154	158	131	112	250	229	229	228	223	217	207	181	178	158	166	170	160	

TOTAL NUMBER OF OBSERVATIONS = 8839 MEAN = 175.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF WIND DIRECTION AT 100 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	N
1	191	187	188	193	191	165	152	250	126	147	195	206	207	214	214	213	213	210	205	203	207	214	204	203	196	39
2	203	206	205	200	200	203	201	204	202	205	202	200	201	210	206	204	198	197	191	192	187	195	183	173	198	33
3	181	174	168	167	162	151	153	165	163	155	173	182	188	186	193	178	178	207	222	294	231	227	213	213	186	31
4	213	213	221	236	228	236	219	213	226	239	279	289	281	278	247	201	217	14	104	309	144	142	197	307	233	21
5	305	249	208	172	213	101	203	145	222	257	309	4	306	310	303	303	299	295	270	282	291	282	280	271	271	51
6	134	230	38	107	124	111	222	168	228	113	50	262	223	203	199	207	196	172	109	190	352	45	139	160	164	33
7	157	164	139	150	154	167	158	141	158	167	199	205	214	215	205	198	200	181	151	118	148	157	145	128	167	48
8	112	128	138	170	82	132	148	168	266	270	284	299	331	308	312	321	310	321	306	301	300	305	295	286	295	38
9	297	284		280	254	220	262	117	125	133		73	111	70	69	190	200	191	192	171	135	171	177	132	170	55
10	130	152	182	144	146	165	189	191	189	190	195	195	194	191	189	193	195	186	189	179	162	181	141	117	175	51
11	177	79	184	186	187	200	21	90	74	115	40	24	3	244	231	199	198	175	143	122	138	112	121	144	142	21
12	153	150	127	140	135	110	135	155	189	188	200	209	207	215	211	219	218	256	178	159	40	236	152	169	176	55
13	178	140	106	146	138	127	149	133	108	97	118	105	246	271	293	56	148	190	234	215	233	272	197	242	165	35
14	83	28	79	19	51	143	156	125	159	35	22	14	255	352			308	287	235	178	144	196	183	192	120	34
15	185	190	175	178	172	178	178	183	187	182	181	193	189	170	277	203	151	168	192	194	193	176	208	185	186	78
16	167	155	188	194	174	154	195	207	181	154	218	206	215	177	147	327	269	190	187	266	276	267	240	148	200	34
17	197	196	203	188	159	137	187	183	184	126	106	103	84	78	121	114	104	137	131	118	144	50	360	138	137	25
18	289	188	153	273	271	123	184	167	168	126		43	215	203	209	210	201	200	105	125	117	130	186	133	174	75
19	174	160	196	185	117	151	354	71	91	95	72	15	321	296	294	331	17	92	153	196	352	15	63	120	84	52
20	112	86	215	169	163	140	169	180	177	103	47	82	255	228	246	204	203	198	86	138	117	114	160	141	156	50
21	163	64	67	116	217	136	117	142	121	149	57	16	210	216	215	226	213	188	154	148	178	158	190	211	161	69
22	210	202	196	161	119	127	128	142	136	107	117	192	185	179	100	23	329	300	237	211	235	247	258	283	183	70
23	287	293	302	305	302	299	295	290	284	283	272	313	312	347	354	321	325	320	335	335	335	335	334	2	314	89
24	3	50	90	90	90	89	90	90	113	104	44	309	31	7	359	334	323	330	256	201	197	177	133	105	65	62
25	109	109	121	165	186	108	158	146	125	122	33	258	233	218	222	224	210	207	197	167	145	102	130	129	160	37
26	167	162	139	158	130	174	150	140	124	179	105	196	207	206	213	207	204	207	208	181	114	137	115	120	168	40
27	149	201	171	124	141	160	182	131	123	190	213	219	216	232	207	215	219	213	201	193	160	157	139	164	180	51
28	148	186	198	132	189	193	135	144	187	98	132	276	295	275	267	257	225	210	202	200	129	133	212	165	190	72
29	162	185	100	182	130	125	119	152	185	85	33	342	88	7	353	2	360	14	355	80	155	239	239	23	88	58
30	352	215	232	320	220	360	177	85	306	159	82	46	16	351	8	28	12	2	171	178	182	196	184	174	106	46
31	153	149	141	122	131	175	234	131	123	104	27	27	224	210	219	206	199	185	136	154	136	121	147	161	155	36
MEAN	159	172	160	164	163	151	170	154	164	144	109	263	231	235	233	227	222	211	186	184	168	177	180	164		

TOTAL NUMBER OF OBSERVATIONS = 8838 MEAN = 178.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

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                    DIURNAL VARIATION OF WIND DIRECTION AT 200 FEET
                     TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                              HOUR
         1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24 MEAN
DAY

  1    198  194  194  201  198  189  180  232  137  166  199  209  211  218  218  217  217  214  209  207  213  218  209  210   203
  2    209  211  210  206  205  208  206  209  207  209  207  204  205  214  210  208  202  203  197  200  200  200  188  178   204
  3    184  178  172  173  167  158  169  171  166  160  177  185  192  190  197  183  183  218  230  293  233  228  216  216   191
  4    217  216  223  235  237  254  241  221  231  243  281  292  284  280  254  209  220   16   94  313  343  132  126  300   247
  5    352  337   11  171  256  120  212  152  215  259  281    5  297  309  303  306  304  299  278  286  297  293  310  323   293
  6    209  249   73  198  123  121  201   38   10  131   82  179  228  210  208  210  198  181  115  202  360   96  176  197   163
  7    205  188  164  166  169  176  171  161  171  174  206  210  216  217  209  203  207  192  171  140  168  171  151  139   181
  8    123  139  149  111  176  117  131  154  271  274  289  292  329  312  315  322  314  322  308  304  304  311  307  295   291
  9    309  297       296  290  242  304  115  133  142        87  116   62   78  200  204  196  197  192  160  192  194  176   185
 10    164  169  196  175  175  192  196  197  195  196  201  200  198  197  193  197  203  196  199  201  193  204  179  181   191
 11    196  192  201  203  205  199  170   45  229  109   42   40  320  244  228  201  202  185  165  146  158  128  130  126   176
 12    140  158  154  174  166  137  161  182  193  194  204  214  211  219  215  221  217  252  196  193  248  253  171  207   195
 13    198  186  202  185  123  143  194  187  183  121  124  117  245  242  301   52  156  206  250  235  249  353  121  287   190
 14    310  315   72  223   27  135  143  155  161  262   55    7  260  353            311  296  242  192  189  205  206  204   229
 15    200  199  190  187  178  185  189  194  195  187  185  198  195  202  278  227  125  185  208  216  219  193  222  206   198
 16    186  184  195  204  195  206  224  227  217  172  222  211  254  184  153  333  272  208  241  282  297  290  273  227   224
 17    203  221  211  203  194  170  203  190  197  171  122  110   89   80  122  120  104  132  124   91   57   48    9   40   138
 18    267  105  125   27  269  159  191  188  183  152        51  220  209  214  212  201  203  174  141  135  145  204  181   179
 19    189  190  208  200  147  151  278   48  114   51   67   14  334  302  298  314   11   72  127  104  267  281  204  150   161
 20     91  121  193  190  195  166  196  199  195  203   49  313  264  248  254  206  205  206   91  145  112   84  148  158   178
 21    222  305   73  129  234  223  114  136  134  160  112  339  212  221  218  227  215  196  164  157  194  174  202  221   187
 22    215  213  204  167  129  135  143  151  142  120  157  199  192  187  109   32   66  136  218  238  248  270  287  310   178
 23    296  296  310  311  309  301  300  291  288  284  276  315  311  336   19  357  321  325  358  301    1  337  311  347   317
 24      1   89  151  289  155  194  147  185  208  175  239  298   16   25  312  337  313  331  298  208  203  213  193  190   230
 25    135  117   50  188  211  119  156  156  139  163   49  306  232  223  227  227  214  215  207  200  200  115  135  152   175
 26    203  187  151  179  174  199  192  196  176  191  200  201  210  210  216  210  206  211  213  191  150  182  136  163   190
 27    168  210  199  167  148  175  198  193  188  200  214  225  224  235  212  220  222  215  206  206  189  204  191  193   200
 28    194  211  206  198  204  200  162  170  202  142  :20  304  290  275  274  264  229  217  222  222  167  155  236  234   216
 29    152  107  199  193  195  147  119  146  212  109   37  352  328  329  331    3    5   13  358   63  129  247  262  245   187
 30    321  301  238  270  235  320  220  123  330  178   84   40   12  355   23   32   13   19  162  175  208  206  205  203   281
 31    204  196  172  167  149  187  208  156  152  145   44   62  232  214  223  209  200  192  157  163  153  138  163  170   174
MEAN   201  199  180  191  189  175  187  173  187  174  158  265  245  240  237  232  221  213  197  199  203  199  196  203

                 TOTAL NUMBER OF OBSERVATIONS =  8837     MEAN  =     199.

         : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 8 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	12	12	11	14	15	23	27	29	16	37	15	16	16	15	15	15	16	15	15	14	14	14	14	14	17
2	14	15	14	13	12	14	12	15	13	14	14	15	16	16	16	13	13	14	13	16	27	13	12	14	15
3	13	13	13	14	21	20	14	16	15	16	14	14	16	13	16	13	19	31	17	15	18	14	13	14	16
4	13	13	14	14	14	14	14	13	14	17	17	15	18	18	16	13	16	21	17	18	14	14	25	21	16
5	24	15	17	11	11	31	15	15	33	16	29	21	27	16	15	13	13	13	12	11	12	10	11	16	17
6	14	11	15	12	13	21	11	14	11	17	23	33	22	29	24	16	13	21	11	15	13	15	21	30	18
7	14	20	11	12	11	11	14	14	17	19	23	15	14	14	13	14	15	14	18	15	14	13	15	17	15
8	15	13	15	20	16	11	15	11	21	14	14	28	15	13	14	25	13	13	14	14	13	12	11	11	15
9	11	11		11	10	11	11	13	16	24		48	51	32	25	32	13	12	13	17	17	29	25	23	21
10	21	13	21	21	24	21	15	14	13	13	12	13	13	13	12	13	14	21	15	19	22	23	18	11	17
11	22	27	24	25	22	44	22	11	20	15	26	22	45	29	21	16	13	10	10	9	10	10	9	11	19
12	19	15	16	21	21	20	30	29	18	21	16	16	17	13	13	14	30	20	17	20	30	14	12	21	20
13	31	16	9	15	13	10	23	12	14	14	22	28	23	25	43	22	13	11	11	10	18	15	11	16	18
14	19	14	21	30	13	12	11	13	25	25	26	35	38	19			12	14	14	12	22	26	22	14	20
15	17	15	19	12	10	11	11	12	12	12	13	13	15	44	19	27	15	14	12	14	15	14	11	11	16
16	11	11	11	19	21	19	15	17	17	11	15	17	24	15	20	16	32	13	11	11	11	9	10	14	16
17	13	25	24	17	13	11	19	19	14	16	17	20	28	22	18	16	13	12	12	15	22	30	12	12	18
18	22	14	14	11	10	23	18	18	16	14		38	17	18	15	14	13	12	26	13	12	10	14	14	16
19	16	14	12	24	11	12	24	44	13	14	20	34	50	20	17	27	15	11	12	15	18	16	19	11	19
20	24	16	11	14	15	15	16	26	42	31	34	46	44	68	48	14	12	16	12	11	11	10	15	12	22
21	27	18	17	16	13	13	18	17	12	14	36	21	19	17	16	15	13	12	11	14	15	13	14	13	17
22	12	13	11	14	13	12	13	12	14	15	27	20	16	17	16	20	31	14	15	13	11	12	12	12	16
23	12	12	13	12	14	13	12	13	14	14	16	14	17	26	47	48	13	13	17	11	20	11	24	18	17
24	18	13	11	21	17	20	12	17	24	14	23	25	37	48		53	17	13	11	11	21	21	22	15	21
25	13	11	11	18	22	10	13	23	14	24	40	60	20	15	16	15	14	13	12	28	14	10	11	12	18
26	19	20	10	12	12	14	12	11	20	27	15	14	14	15	15	14	12	14	13	16	27	25	14	23	17
27	16	42	21	11	11	11	12	24	13	17	27	24	30	27	18	16	15	13	14	24	35	34	16	21	21
28	47	50	24	27	22	35	16	15	27	22	49	49	26	21	21	21	13	12	13	16	30	15	10	27	25
29	13	33	32	16	25	13	11	11	28	17	21	29	32		45	43	32	21	16	22	12	12	19	15	22
30	15	17	14	19	17	20	17	24	33	24	38	36	41		35	52	20	14	11	14	27	25	15	17	24
31	17	19	22	12	13	14	21	16	11	16	18	57	28	17	17	15	12	12	12	13	12	13	16	11	17
MEAN	18	18	16	17	16	17	16	18	19	19	23	26	25	22	21	21	16	15	14	15	18	17	16	16	

TOTAL NUMBER OF OBSERVAITONS = 8553 MEAN = 18.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 30 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	11	10	9	12	12	19	26	23	13	32	12	13	12	14	12	12	13	12	12	12	12	11	11	11	14
2	11	12	12	10	10	11	11	11	10	11	11	13	13	13	12	11	11	11	11	12	23	10	9	11	12
3	11	9	10	11	18	17	11	12	11	13	10	12	14	11	14	11	17	23	15	13	15	11	11	11	13
4	11	9	11	11	11	11	10	9	11	13	13	11	15	14	13	10	14	19	13	10	12	11	22	25	13
5	13	14	17	9	9	18	12	18	25	12	22	30	13	12	13	10	11	10	9	10	8	10	9	13	14
6	10	10	10	17	10	14	9	15	8	15	12	35	18	24	20	11	10	14	8	11	16	23	20	31	16
7	13	29	9	11	8	8	12	11	14	18	18	12	12	11	11	11	14	12	13	11	11	9	12	14	13
8	13	11	10	14	18	8	10	9	10	10	10	18	24	12	11	11	10	10	11	10	9	10	8	8	12
9	10	10		9	8	9	10	9	21	18		49	49	34	23	33	10	10	10	28	14	30	24	23	20
10	18	14	18	21	24	21	13	11	11	11	10	11	11	10	11	10	11	19	12	19	23	23	16	9	15
11	23	29	26	34	40	44	15	11	18	11	21	25	55	31	16	13	11	8	8	8	8	8	8	8	20
12	12	11	15	22	19	17	30	25	18	18	15	13	14	12	12	11	27	20	15	20	28	13	10	19	18
13	33	20	9	13	13	9	19	14	23	12	19	18	19	35	29	19	10	8	8	8	20	11	10	19	17
14	18	19	25	32	15	10	10	24	16	22	45	27	29	28			11	12	12	12	21	26	21	14	20
15	12	12	20	8	9	6	8	9	10	10	10	10	13	42	17	20	11	13	10	10	11	10	9	8	13
16	8	18	9	11	24	18	13	15	15	9	12	13	21	10	18	22	32	10	12	10	8	9	8	9	14
17	11	18	22	31	20	9	20	15	20	18	13	17	27	19	14	13	10	9	10	11	16	29	13	10	17
18	18	6	13	9	15	16	17	11	17	12		34	16	14	13	12	10	10	23	11	10	9	20	14	15
19	11	25	11	20	9	11	17	42	11	12	17	30	30	17	15	28	9	12	9	9	16	19	13	12	17
20	10	16	8	12	11	10	17	22	45	24	22	41	36	50	40	10	10	18	9	8	8	8	11	10	19
21	25	33	15	12	11	14	15	13	10	11	31	17	16	13	12	12	10	10	8	9	11	10	9	10	14
22	9	19	9	10	10	9	9	9	11	11	24	18	13	13	14	11	15	12	10	9	9	10	10	10	12
23	9	9	11	10	10	9	10	9	10	10	11	11	22	21	25	8	9	8	9	9	8	9	10	8	11
24	9	8	9	9	9	9	9	10	10	6	13	24	54	35	27	30	15	12	9	9	15	27	18	13	15
25	8	9	8	15	25	9	9	19	11	23	20	29	17	12	13	12	10	10	9	25	15	8	9	10	14
26	13	17	8	8	9	21	15	11	10	22	12	12	12	12	12	11	11	11	10	14	18	24	11	20	14
27	13	47	23	11	9	9	16	22	11	15	20	22	26	22	15	13	12	11	12	24	33	39	15	18	19
28	35	41	25	31	10	32	15	13	14	20	:49	30	14	16	17	16	11	10	10	15	24	11	16	16	21
29	10	24	34	9	19	10	9	9	18	13	21	35	26		47	23	41	20	13	19	11	11	16	18	20
30	13	19	12	19	12	13	13	17	29	27	35	26	39	50	22	47	33	10	10	11	26	40	25	30	24
31	20	10	24	9	10	13	18	10	10	15	12	59	27	14	14	12	11	8	10	9	9	9	14	8	15
MEAN	15	17	15	15	15	14	14	15	16	16	18	23	22	20	18	16	14	13	11	13	16	16	14	14	

TOTAL NUMBER OF OBSERVATIONS = 8613 MEAN = 16.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 100 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	6	8	8	10	10	19	30	20	11	30	13	12	13	11	11	11	12	11	11	11	11	10	11	9	13
2	10	12	11	10	9	10	10	10	10	11	11	12	12	12	11	11	11	12	10	13	22	10	10	10	12
3	10	10	10	11	18	15	10	12	12	11	9	11	12	11	13	9	17	22	17	13	14	11	10	10	13
4	8	9	9	10	12	12	10	7	8	15	14	11	15	14	13	11	13	15	12	11	20	9	16	11	12
5	13	27	13	9	10	14	12	11	17	12	26	22	13	11	10	10	10	8	9	9	9	9	10	15	13
6	14	16	15	8	8	12	12	22	20	13	11	38	17	20	18	11	9	15	8	15	16	18	22	40	17
7	40	27	9	11	8	8	11	12	12	14	17	12	11	9	10	10	13	11	12	12	14	10	10	12	14
8	10	9	10	20	14	8	7	9	10	9	9	20	32	10	11	10	10	10	10	11	9	9	9	9	12
9	9	7		9	10	11	10	6	14	12		26	49	26	21	22	10	9	10	26	15	34	20	29	18
10	20	11	18	22	25	21	12	11	10	10	10	9	10	10	10	9	11	18	11	15	26	25	27	18	16
11	25	49	31	24	29	28	18	19	19	10	17	18	33	35	13	13	11	7	8	7	8	7	8	7	18
12	12	11	17	22	18	19	26	19	15	17	15	13	13	11	11	10	17	26	15	23	36	24	10	24	18
13	27	26	15	17	14	7	28	23	23	12	18	27	18	34	31	20	10	9	8	8	20	15	14	18	19
14	23	18	15	11	18	9	13	18	10	14	27	28	29	20			11	12	14	18	32	18	15	14	18
15	13	9	17	6	8	7	7	8	9	10	10	10	13	41	17	17	13	10	8	9	10	8	9	9	12
16	10	9	8	9	31	20	12	9	18	8	11	13	21	13	19	19	27	10	17	11	9	9	9	11	14
17	12	12	11	22	21	12	15	10	11	24	13	16	21	15	13	11	9	9	9	12	19	30	27	20	16
18	14	23	15	32	13	19	19	20	15	9		24	14	12	12	11	10	10	51	15	14	8	21	25	18
19	11	24	10	15	18	9	29	27	10	11	15	30	20	16	13	18	7	9	8	25	19	9	16	10	16
20	10	25	11	9	16	13	19	22	40	41	25	28	38	50	29	9	10	16	9	8	8	7	11	8	19
21	14	26	9	10	13	21	12	11	13	10	39	31	14	12	11	11	11	9	9	9	7	7	8	9	14
22	9	9	8	11	9	9	7	8	10	11	27	17	14	13	12	8	17	11	8	6	9	8	8	9	11
23	5	9	9	9	9	9	9	6	9	10	11	10	20	11	47	37	8	7	8	9	9	9	8	7	12
24	10	6	6	7	7	7	6	7	15	20	24	23	29	36	16	34	12	8	11	8	11	50	33	32	17
25	9	8	10	13	33	10	10	12	9	21	15	45	15	10	12	12	10	9	8	29	23	8	10	9	15
26	24	12	8	10	13	29	25	39	29	21	12	11	11	11	11	10	9	9	9	14	23	31	12	31	18
27	14	38	17	13	9	8	16	37	17	15	19	20	23	21	13	12	12	9	10	16	26	46	26	21	19
28	49	31	35	31	15	31	21	10	13	26	45	32	13	13	15	15	9	8	9	18	20	13	15	29	22
29	10	15	23	10	27	10	8	7	28	12	17	26		37	44	12	19	17	15	12	13	10	15	24	17
30	13	15	17	23	12	20	16	13	19	21	37	17	35		20	26	16	28	8	9	24	36	41	22	21
31	34	19	28	11	9	16	22	15	9	16	18	50	31	12	12	11	10	9	10	9	9	8	13	8	16
MEAN	16	17	15	15	15	15	15	15	15	16	18	21	20	18	16	14	12	12	12	14	17	17	16	17	

TOTAL NUMBER OF OBSERVATIONS = 8601 MEAN = 16.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 200 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	9	8	8	8	8	23	30	24	15	28	12	11	11	12	9	11	10	9	10	11	9	9	10	8	13
2	10	10	10	8	8	9	10	10	7	10	10	11	11	12	10	9	10	11	10	12	21	10	9	10	11
3	10	10	10	11	16	16	11	11	10	11	11	11	13	10	12	10	16	20	16	12	13	10	9	9	12
4	9	8	9	9	11	11	11	8	8	12	13	11	13	12	14	11	11	10	9	16	26	10	27	17	13
5	14	19	10	10	12	24	12	12	20	12	20	25	15	10	10	11	10	9	8	8	8	9	8	10	13
6	12	14	7	7	8	13	10	11	9	10	15	43	15	18	16	10	8	18	12	10	9	20	28	20	15
7	30	16	9	10	10	8	10	13	10	13	18	11	8	10	10	9	14	11	13	16	16	10	9	9	13
8	8	9	16	25	43	9	8	9	10	9	9	14	12	10	11	12	9	10	9	10	9	10	9	9	12
9	8	8		10	11	12	11	8	17	11		39	57	26	21	26	9	8	8	16	19	34	20	25	19
10	20	11	13	21	24	15	11	10	9	10	10	10	10	9	11	9	11	15	10	11	18	17	29	23	14
11	15	48	18	13	11	14	27	22	17	13	28	29	32	25	13	14	10	8	7	9	10	8	12	15	17
12	25	12	19	17	19	21	21	17	14	18	13	12	14	11	10	11	15	21	17	23	34	13	12	22	17
13	38	19	31	18	29	11	20	15	27	17	16	26	15	32	13	16	11	11	9	9	25	15	15	19	19
14	15	13	19	10	18	8	8	8	8	16	39	35	25	25			10	11	15	14	23	9	8	10	16
15	9	9	11	8	7	7	7	7	9	10	9	10	12	35	17	20	35	17	9	9	12	11	8	11	13
16	12	14	7	8	19	16	9	9	12	10	10	13	37	14	19	16	17	11	12	11	9	9	10	10	13
17	11	9	7	11	11	15	10	8	9	17	11	16	17	14	14	11	9	8	7	15	15	31	22	9	13
18	25	10	9	19	12	20	10	15	11	10		22	13	12	11	10	10	8	50	31	27	12	14	21	17
19	13	17	8	19	23	9	26	48	21	12	14	21	50	16	13	20	8	6	8	14	16	23	15	11	18
20	15	8	10	9	13	19	15	14	16	21	26	46	32	47	29	8	9	10	20	8	12	10	10	10	17
21	9	11	8	9	11	16	15	9	20	9	35	49	13	12	10	10	10	9	7	7	9	8	10	10	13
22	9	10	8	10	8	8	8	8	8	10	26	15	15	13	14	8	22	12	10	9	9	9	10	10	12
23	8	9	9	9	11	9	8	9	10	10	11	9	22	26	71		10	11	9	11	10	16	9	24	14
24	27	9	7	13	12	12	21	10	10	12	29	14	28	39	19	33	13	9	15	7	8	15	27	43	18
25	24	22	12	15	14	17	9	23	18	20	22	38	13	11	11	10	9	8	7	15	16	29	17	18	17
26	15	10	10	13	18	14	21	26	26	23	10	10	10	10	9	10	8	9	9	13	32	33	26	39	17
27	15	10	13	19	12	11	12	28	14	11	16	18	23	18	11	11	9	8	9	11	23	39	25	18	16
28	24	10	12	16	10	18	19	9	9	18	41	35	13	14	14	17	10	8	9	9	26	13	9	11	16
29	12	10	16	10	18	13	10	8	11	22	30	43	40	37	46	21	12	22	8	14	11	12	10	12	19
30	18	15	11	10	10	13	13	14	20	16	34	18	29	47	38	25	22	8	10	8	12	16	17	13	18
31	18	20	25	23	16	13	24	21	17	14	22	52	30	11	11	8	10	10	16	10	10	9	12	7	17
MEAN	16	14	13	13	15	14	15	14	14	15	19	22	21	18	17	14	12	12	12	13	16	16	15	16	

TOTAL NUMBER OF OBSERVATIONS = 8579 MEAN = 15.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN CORPORATION

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 30 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	9	9	10	13	13	20	30	25	12	34	13	13	14	13	13	12	12	12	12	11	12	12	12	11	15
2	11	12	13	11	10	11	11	11	10	11	13	12	14	14	13	11	11	13	11	14	24	11	9	11	13
3	12	11	11	12	19	17	12	12	11	13	11	12	15	11	14	11	18	24	21	16	16	12	11	11	14
4	11	9	11	11	12	11	10	10	11	15	19	12	22	13	13	11	15	11	14	10	17	10	15	20	13
5	11	13	16	9	9	7	12	16	22	12	13	19	51	14	12	11	10	10	10	10	9	11	9	12	14
6	12	11	10	19	10	13	10	12	9	16	12	20	18	24	20	11	11	15	8	11	19	15	20	30	15
7	23	31	9	11	9	9	13	13	14	23	19	13	12	10	11	10	14	12	13	12	12	9	12	14	14
8	12	11	11	21	17	8	10	10	10	10	9	15	48	14	11	52	10	52	11	12	10	10	10	8	16
9	8	8		8	8	10	9	10	13	15		28	45	32	21	24	11	10	10	17	14	21	25	25	17
10	19	11	18	20	26	22	13	12	11	11	11	12	11	11	11	9	13	21	13	21	24	26	17	9	16
11	17	29	25	32	35	29	15	12	14	13	11	12	35	31	18	15	11	8	7	8	9	8	8	7	17
12	13	10	15	24	19	17	31	25	12	19	17	14	15	12	12	11	28	19	14	21	33	15	10	21	18
13	31	18	10	13	13	6	20	18	15	12	20	25	20	25	20	15	10	10	8	9	21	11	9	13	16
14	13	15	11	12	21	10	10	17	12	15	31	25	31	19			20	12	14	13	21	21	23	15	18
15	13	13	20	10	8	10	8	9	10	11	11	10	14	48	18	21	12	13	12	12	11	10	9	8	14
16	10	10	10	12	34	18	13	16	16	8	12	14	39	13	21	20	24	11	13	12	9	7	8	10	15
17	11	18	25	28	15	9	20	15	21	16	14	17	24	19	15	14	11	9	10	11	14	24	14	9	16
18	22	8	18	10	14	15	15	14	18	13		27	17	14	14	12	11	11	28	11	10	10	21	15	16
19	12	23	11	22	11	8	26	43	13	13	17	32	28	16	14	25	9	13	10	11	17	18	17	10	18
20	9	11	7	13	12	12	18	24	44	24	24	40	34	62	38	11	10	18	9	8	8	9	11	10	19
21	16	16	9	13	12	16	20	12	9	11	21	13	17	13	13	12	11	10	8	10	11	9	10	9	13
22	11	10	8	11	10	9	9	10	10	13	23	20	14	14	15	8	23	10	10	9	9	10	11	10	12
23	9	10	9	10	9	9	9	10	11	11	13	27	19		17	16	27	10	19	10	15	11	9	14	13
24	11	7	9	16	16	15	9	11	19	12	16	25	28	24	45	32	23	19	12	9	16	22	17	13	17
25	9	9	8	14	27	8	9	26	11	26	13	43	17	12	14	12	10	9	10	26	16	10	9	10	15
26	15	19	8	9	10	22	17	12	20	23	12	12	13	13	12	10	11	11	11	15	18	28	11	22	15
27	15	49	19	10	9	8	17	23	11	15	21	23	28	24	15	13	12	11	11	26	41	43	17	23	20
28	30	43	21	32	20	31	17	15	19	20	26	31	24	18	18	16	12	10	11	18	27	10	17	16	21
29	10	25	14	10	20	9	10	9	15	14	16	28	28	26	15	11	11	8	12	15	17	11	15	9	15
30	13	19	14	12	14	12	16	18	18	23	27	21	24	36	23	35	9	13	10	11	26	45	26	32	21
31	23	17	28	10	9	12	20	12	11	16	18	52	30	14	15	12	11	10	12	8	10	11	15	8	16
MEAN	15	16	14	15	16	14	15	16	15	16	17	21	24	20	17	16	14	13	12	13	17	16	14	15	

TOTAL NUMBER OF OBSERVATIONS = 8592 MEAN = 16.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 100 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	10	8	9	11	9	18	34	24	11	29	14	12	12	12	11	11	10	11	10	11	11	11	11	10	14
2	10	11	11	10	10	10	10	9	9	11	11	10	12	12	11	11	11	11	10	12	21	10	10	10	11
3	11	10	9	11	19	15	11	11	11	12	10	12	13	11	12	10	17	21	15	12	13	12	9	9	13
4	3	8	9	10	12	12	10	8	9	13	13	11	14	13	13	11	13	10	11	9	12	9	13	9	11
5	12	27	10	8	10	14	12	11	13	12	31	33	12	10	11	11	9	10	9	10	9	10	9	16	13
6	10	11	15	8	8	14	12	11	17	13	11	39	16	20	18	10	9	22	6	16	19	14	23	39	16
7	41	27	9	11	9	8	12	12	13	15	17	12	10	10	10	8	14	10	12	11	13	10	10	12	13
8	9	9	9	18	12	8	7	8	9	9	8	13	12	12	9	11	10	9	10	11	10	9	9	8	10
9	9	9		10	9	11	11	12	16	13		30	38	27	21	21	10	11	11	22	14	34	20	26	18
10	21	10	18	22	26	20	11	10	10	10	11	11	10	10	10	10	11	18	11	15	24	22	28	16	16
11	23	25	32	22	28	28	29	14	17	9	16	34	40	19	13	12	10	8	7	7	8	6	7	8	17
12	12	12	15	21	19	19	27	22	19	17	14	12	13	11	10	9	15	26	16	23	36	20	10	25	18
13	23	24	15	16	15	9	26	19	16	11	17	25	17	24	13	25	10	9	10	7	23	19	13	17	17
14	9	9	18	10	13	8	12	9	9	23	26	47	35	29			9	12	13	15	31	17	17	12	17
15	12	10	17	8	7	7	7	9	10	10	10	10	13	40	15	17	15	10	9	9	9	7	9	9	12
16	9	11	8	9	33	20	11	9	20	9	10	13	23	11	18	16	17	10	16	11	10	10	9	10	14
17	12	10	13	21	19	12	14	10	11	23	12	20	25	15	13	11	8	9	9	12	22	28	17	14	15
18	14	12	12	22	15	16	23	18	13	10		23	13	12	12	11	9	10	60	14	14	8	21	26	17
19	10	21	11	15	18	9	29	36	8	11	15	18	19	15	13	14	24	9	7	20	13	9	7	7	15
20	11	11	10	10	14	11	17	21	35	42	23	38	32	50	27	10	8	16	11	7	8	7	10	9	18
21	13	10	8	11	13	21	13	10	12	10	28	43	15	12	10	12	10	9	8	7	7	7	8	9	13
22	9	9	6	10	10	6	7	9	10	11	20	16	14	13	12	16	12	10	13	9	10	9	9	10	11
23	8	8	9	10	10	9	14	9	10	10	12	9	17	22	10	11	10	10	14	12	10	10	8	17	11
24	20	11	8	13	15	13	14	11	17	20	26	20	23	32	23	23	11	9	11	8	11	51	32	31	19
25	8	8	9	12	27	14	9	11	9	21	29	39	14	11	12	10	9	8	8	28	21	8	10	9	15
26	21	12	8	11	13	26	24	35	32	20	10	11	10	11	10	10	10	10	9	13	23	31	12	27	17
27	14	37	17	13	8	9	15	32	16	14	23	19	23	21	13	11	11	8	10	16	27	37	22	20	18
28	43	24	30	26	14	26	19	10	13	27	35	30	14	14	15	15	10	8	9	12	17	10	15	40	20
29	9	14	25	10	28	10	7	8	26	12	25	29		17	16	29	19	13	21	12	12	11	22	13	17
30	11	15	14	11	11	18	15	15	14	18	26	17	29	25	33	27	20	16	7	9	23	32	39	20	19
31	30	15	29	11	8	16	18	14	8	15	32	40	26	11	12	10	9	8	13	9	9	8	13	8	16
MEAN	16	15	14	14	15	15	16	15	15	16	18	22	19	18	15	14	12	12	13	13	16	16	15	16	

TOTAL NUMBER OF OBSERVATIONS = 8630 MEAN = 15.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN CORPORATION

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 200 FEET
TRAILER NO. = 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	6	7	9	10	14	26	19	12	23	12	10	10	11	10	10	9	9	9	9	10	10	10	9	12
2	9	9	10	7	6	9	9	9	8	9	10	10	10	10	10	10	10	9	9	12	19	9	8	10	10
3	9	4	8	10	15	14	10	10	11	11	9	9	11	6	10	10	14	18	13	11	12	10	9	8	11
4	9	7	8	9	11	9	10	8	7	11	11	9	12	12	14	10	10	20	10	10	11	12	17	18	11
5	10	24	13	8	12	13	10	11	16	10	17	34	14	10	11	10	10	8	8	8	8	9	9	8	12
6	9	11	13	7	7	14	9	22	11	14	14	36	14	18	16	10	8	13	12	10	9	17	25	17	14
7	27	15	9	9	10	9	10	12	9	12	18	21	10	9	9	9	13	9	12	15	15	9	8	10	12
8	7	9	13	19	35	9	7	8	11	8	9	15	10	10	10	10	10	9	9	8	9	8	10	8	11
9	6	7		10	11	12	13	7	14	11		38	52	22	21	26	8	8	9	15	16	24	20	22	17
10	18	11	13	16	21	13	11	9	9	9	9	10	9	9	9	8	10	13	9	9	16	15	29	20	13
11	13	45	14	13	10	21	35	20	22	13	29	36	32	24	12	12	9	8	9	9	9	9	11	13	18
12	24	11	17	15	16	21	18	16	13	16	12	11	11	10	10	7	14	20	16	21	36	13	12	19	16
13	25	15	20	15	24	10	17	11	20	14	15	27	15	23	15	16	10	10	8	8	23	11	14	18	17
14	14	13	12	14	11	8	8	7	8	10	43	29	29	31			11	11	13	12	17	9	8	9	15
15	9	7	9	7	6	8	8	8	9	8	9	9	11	32	16	17	31	15	8	9	11	10	8	8	12
16	14	12	8	8	10	13	8	8	10	10	9	12	24	13	15	18	16	10	12	10	10	8	9	9	12
17	5	9	8	11	10	13	11	8	12	20	10	15	16	13	13	10	7	12	7	14	22	30	20	10	13
18	12	8	10	20	13	19	14	14	10	10		22	11	11	11	9	9	7	43	26	27	11	12	17	16
19	11	15	3	19	20	6	28	62	18	16	14	19	15	15	13	16	16	6	8	8	12	13	12	9	16
20	7	8	9	8	12	14	13	12	17	17	33	40	29	35	30	6	8	9	18	9	11	10	9	8	16
21	11	15	8	8	11	15	13	8	17	9	36	42	13	10	10	9	10	9	8	7	7	7	9	8	13
22	6	9	9	9	7	8	6	8	6	10	22	14	13	11	12	8	10	10	10	8	9	9	9	10	10
23	10	8	9	9	11	9	9	8	10	9	11	16	20	14	11	11	11	10	11	11	21	17	9	22	12
24	18	15	7	13	12	11	17	10	11	12	26	17	24	24	20	20	12	9	12	8	8	13	23	32	16
25	22	16	20	12	12	21	8	19	13	16	25	40	11	11	11	11	9	8	7	13	13	25	14	16	16
26	13	8	9	11	16	13	17	22	22	19	8	10	9	9	9	9	9	12	9	12	27	28	21	36	15
27	15	9	11	17	11	9	11	23	12	10	13	17	20	17	12	11	9	8	9	11	16	33	20	14	15
28	19	10	11	13	10	15	15	8	8	17	40	37	12	14	13	15	8	8	9	9	19	20	9	9	15
29	10	11	11	9	16	12	10	8	10	18	30	35	20	29	13	32	11	8	8	15	10	10	10	12	15
30	15	12	10	9	8	14	20	14	25	14	30	21	39	18	33	51	16	8	8	13	10	14	12	11	17
31	18	17	24	19	13	12	22	25	14	12	32	48	24	11	10	8	9	8	12	9	8	9	11	7	16
MEAN	13	13	12	12	13	13	14	14	13	13	19	22	18	16	14	14	11	11	12	12	15	14	14	14	

TOTAL NUMBER OF OBSERVATIONS = 8650   MEAN = 14.

: INDICATES CALIBRATION DURING THE HOUR

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                         DIURNAL VARIATION OF RELATIVE HUMIDITY AT 8 FEET
                         TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                               HOUR
         1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

  1     75  75  77  77  76  77  76  76  76  73  68  66  65  66  67  66  67  69  70  72  73  74  76  78    73
  2     79  77  76  75  78  76  75  74  73  71  69  68  66  64  62  63  65  68  68  68  67  68  70  71    71
  3     72  73  75  76  76  75  77  76  75  75  74  73  71  73  72  72  73  75  81  90  90  85  83  83    77
  4     83  84  85  85  87  85  83  84  86  83  75  69  64  61  61  66  75  91  94  95  95  94  94  94    83
  5     95  95  95  95  95  95  95  95  94  94  94  94  94  94  93  94  96  96  96  96  96  96  97  96    96
  6     95  95  95  95  95  95  95  94  94  95  93  86  79  75  74  74  77  81  86  87  87  87  84  82    88
  7     85  86  86  86  87  88  89  89  87  82  77  73  71  69  69  70  70  73  76  78  78  79  79  79    80
  8     81  81  80  82  83  82  82  84  85  85  85  83  83  85  86  89  90  91  92  91  91  92  92  92    87
  9     92  92      92  91  91  90  90  90  90      78  70  64  61  61  67  71  73  73  73  72  70  70    79
 10     71  71  70  70  69  68  66  65  64  61  57  57  56  55  55  55  56  57  56  57  57  57  58  60    61
 11     61  61  63  64  66  67  67  68  67  63  58  54  51  49  46  47  48  51  53  55  56  57  56  55    58
 12     54  54  57  57  56  57  55  55  52  49  45  44  43  42  44  45  47  48  50  51  52  54  55  56    51
 13     57  59  61  60  61  62  62  64  65  64  60  57  57  57  61  68  70  71  72  74  75  78  81  83    66
 14     84  84  85  87  86  88  89  90  88  85  77  70  65  64          66  68  69  70  72  73  73  75    78
 15     75  76  78  76  79  78  79  78  75  69  67  65  64  61  57  59  63  66  68  68  69  69  69  70    71
 16     70  70  71  71  73  75  75  75  75  73  68  67  66  72  75  87  94  96  95  94  92  93  94  89    80
 17     90  88  88  87  88  86  84  84  82  81  77  68  62  61  61  60  61  65  67  67  69  72  74  77    76
 18     79  81  82  84  85  85  88  88  87  83      66  61  60  59  59  61  66  70  71  72  72  71  73    75
 19     72  72  72  73  76  77  79  79  77  72  66  65  63  62  60  60  62  64  69  73  72  73  75  77    71
 20     77  77  79  78  76  76  78  78  77  73  67  62  58  56  55  56  59  65  69  72  71  72  70  68    70
 21     68  68  70  69  70  68  67  65  64  63  58  56  51  49  50  51  53  54  56  57  57  58  61  63    61
 22     64  64  66  77  92  96  96  93  95  96  95  92  90  87  89  94  98  98  99  99  99  99  99  99    91
 23     99  99  99  99  99  99  99  99  99  99  99  99  99  99  99  98  99  99  99  99  99  99  99  99   100
 24     99  99  99  99  99  99  99  99  99  99  96  82  70  66  68  68  67  67  78  87  91  92  91  92    88
 25     92  91  91  92  91  94  94  93  93  90  85  75  59  62  61  58  60  66  70  71  73  75  75  77    79
 26     79  80  82  81  84  87  89  91  87  79  73  66  63  63  61  61  61  62  62  64  65  67  69  70    73
 27     73  77  80  83  86  87  89  90  89  79  68  66  65  63  63  64  66  71  73  74  74  76  76  76    76
 28     77  76  76  76  76  78  79  81  77  71 :63  53  48  48  48  48  51  58  64  66  66  65  64  61    66
 29     59  59  57  59  60  64  69  69  68  66  57  49  47  45  44  43  44  45  47  49  52  57  58  59    56
 30     50  61  63  62  65  67  69  67  68  63  55  51  49  47  46  45  46  45  51  54  54  55  58  59    57
 31     60  59  58  58  58  58  58  58  59  55  51  47  46  45  45  46  48  51  53  55  56  58  56  56    54
 MEAN     77  77  78  79  80  81  81  81  80  77  72  68  65  64  64  65  67  70  72  74  74  75  76  76

                         TOTAL NUMBER OF OBSERVATIONS =  8841     MEAN  =      74.

                 : INDICATES CALIBRATION DURING THE HOUR
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                      DIURNAL VARIATION OF RELATIVE HUMIDITY AT 30 FEET
                        TRAILER NO. = 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                          HOUR
      1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

 1
 2
 3
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
MEAN  0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
```

DIURNAL VARIATION OF RELATIVE HUMIDITY AT 100 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	79	79	81	82	82	82	82	81	81	79	74	72	72	72	73	72	73	75	76	77	78	79	81	83	78
2	82	80	84	79	82	80	79	78	78	77	75	74	72	70	68	68	70	72	73	73	73	73	75	76	76
3	77	78	80	82	82	81	82	81	81	80	79	78	77	78	78	78	78	80	86	95	94	88	86	85	82
4	85	87	88	88	89	86	83	84	85	86	78	71	66	63	63	67	78	96	100	100	100	99	98	100	85
5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
6	100	100	100	100	100	100	100	100	100	100	100	99	88	81	80	80	82	84	89	89	89	88	82	83	92
7	86	87	88	86	88	91	92	93	92	88	82	78	75	73	73	74	74	77	79	82	81	82	83	83	83
8	85	85	84	85	85	85	85	85	89	91	92	90	90	92	94	96	98	99	100	100	100	100	100	100	93
9	100	100		100	99	99	99	99	99	98		88	80	72	67	66	72	76	77	77	76	75	73	72	85
10	73	73	72	72	71	70	68	68	66	63	59	59	58	56	56	56	57	59	58	57	57	57	58	59	63
11	60	60	61	62	63	65	65	65	65	64	60	56	53	51	49	49	49	50	52	54	54	56	53	52	57
12	52	51	54	54	55	56	55	55	52	50	46	44	44	43	43	45	47	48	50	52	53	55	55	56	51
13	58	59	60	60	60	61	63	65	65	66	63	60	60	60	63	71	73	74	74	74	73	80	81	81	67
14	83	83	85	86	87	86	88	89	87	86	81	73	69	67			68	70	71	71	74	74	74	75	79
15	75	76	78	79	80	80	80	78	76	72	70	68	66	63	59	60	63	65	67	68	68	67	67	67	71
16	66	69	73	71	73	73	72	72	72	72	70	69	69	75	80	92	100	100	98	93	93	91	88	87	80
17	83	82	82	82	81	80	80	79	77	75	76	70	64	63	62	61	60	64	66	65	66	69	70	71	73
18	72	74	74	75	81	81	82	83	82	79		67	62	60	59	59	60	64	67	67	67	66	66	67	71
19	66	67	67	67	70	73	75	76	74	72	67	66	64	63	61	61	61	62	62	65	69	71	71	72	68
20	72	73	73	71	71	72	72	73	73	70	66	63	59	56	55	56	59	64	68	68	69	68	65	63	67
21	64	65	66	66	65	64	62	62	61	60	58	56	51	49	51	51	53	53	54	56	54	54	54	55	58
22	57	61	66	79	97	100	98	95	99	100	99	97	94	92	93	99	100	100	100	100	100	100	100	100	93
23	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
24	100	100	100	100	100	100	100	100	100	100	100	92	80	75	76	76	74	71	72	84	91	91	93	94	91
25	94	91	89	89	92	95	95	95	95	95	91	83	68	67	70	66	67	72	75	76	77	78	79	81	83
26	82	81	83	84	88	91	92	93	91	87	82	75	71	71	69	69	68	68	68	70	72	73	75	75	79
27	78	83	87	89	90	91	92	93	95	88	77	75	74	72	72	73	75	78	80	81	80	81	81	82	82
28	81	79	79	78	79	81	82	82	80	78	71	62	55	54	54	53	57	63	67	65	68	66	61	62	69
29	60	59	59	59	62	66	71	69	69	71	65	57	54	51	50	48	48	49	51	54	56	57	60	63	59
30	64	65	66	67	67	68	69	69	70	70	63	59	56	54	53	52	52	52	52	53	55	57	60	61	61
31	61	61	60	60	60	59	60	59	60	59	56	54	52	52	51	52	53	55	57	57	59	61	60	60	58
MEAN	78	78	78	79	81	82	82	82	82	80	76	73	70	68	68	69	71	73	74	75	76	76	76	77	

TOTAL NUMBER OF OBSERVATIONS = 8838 MEAN = 76.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARAITON OF RELATIVE HUMIDITY AT 200 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1																									
2																									
3																									
4	75	76	77	77	78	74	71	72	75	75	65	58	53	50	50	55	68	88	91	92	91	90	88	91	75
5	92	92	93	93	93	93	93	92	92	91	92	92	92	92	92	92	93	93	93	93	93	93	92	92	93
6	92	92	92	92	91	91	91	91	91	92	92	90	80	69	67	67	69	71	77	76	76	73	67	70	82
7	73	74	74	73	75	79	80	80	78	75	69	64	59	55	56	58	59	63	65	67	67	68	69	69	69
8	71	69	69	69	70	71	71	72	76	79	80	79	79	82	83	86	88	88	88	87	87	87	87	87	80
9	94	94		94	93	93	93	93	93	94		95	85	67	60	60	66	70	71	71	69	68	66	65	80
10	65	65	64	64	64	62	60	60	58	55	50	50	50	49	49	49	50	52	51	49	49	50	50	52	55
11	53	54	54	54	55	56	56	58	57	55	53	51	48	45	43	43	44	45	45	46	47	48	46	45	51
12	45	45	47	47	49	49	49	48	45	43	40	38	38	37	38	40	42	44	45	47	48	50	50	51	45
13	53	54	55	55	55	57	59	61	62	62	59	57	56	57	61	69	72	72	72	70	69	78	79	78	64
14	79	80	81	82	83	83	83	84	81	81	78	70	65	64			65	67	68	68	70	70	70	71	75
15	72	72	73	73	75	75	74	73	71	68	68	64	62	58	55	57	59	60	62	63	64	64	64	64	67
16	64	65	65	67	68	68	67	66	67	67	66	66	66	71	76	90	98	97	94	90	88	85	84	82	76
17	78	72	70	73	73	72	73	70	67	66	69	64	60	59	58	57	56	59	60	60	62	64	66	67	66
18	68	70	70	73	75	76	77	79	77	74		64	59	57	56	56	58	61	63	63	62	62	62	62	67
19	62	64	61	60	64	65	74	74	69	66	64	64	62	60	58	58	59	59	59	62	66	67	68	69	64
20	69	68	67	67	67	68	69	68	69	65	63	60	56	53	52	53	56	59	63	63	64	64	61	58	63
21	59	61	62	61	64	61	59	57	58	57	55	54	49	48	50	50	51	52	53	53	52	52	52	53	55
22	55	60	66	77	94	96	92	88	94	97	97	93	90	87	89	96	96	97	98	98	99	100	100	100	90
23	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99	98	96	95	98	99	100	100	100	100
24	100	100	99	99	98	99	98	97	96	96	93	87	75	73	73	73	70	66	67	80	83	86	90	92	87
25	91	87	85	86	91	93	92	92	92	91	89	80	62	63	66	62	63	68	70	72	73	73	74	77	79
26	78	76	79	81	85	88	90	93	88	85	79	71	67	67	63	64	63	64	63	65	67	70	71	71	75
27	74	84	85	87	88	90	90	92	92	85	73	72	71	69	69	70	72	75	77	77	76	77	78	78	80
28	77	73	72	73	74	77	77	75	74	73	66	57	51	51	52	50	55	61	61	59	63	61	56	56	65
29	55	54	54	55	58	64	67	65	62	63	60	53	51	48	47	45	45	47	48	51	53	54	56	59	55
30	60	60	61	62	62	63	64	63	63	63	58	54	53	51	50	50	50	50	50	50	51	54	56	57	57
31	57	57	55	56	56	55	56	55	55	54	53	51	50	50	50	50	52	53	55	55	56	56	56	56	54
MEAN	72	72	72	74	75	76	76	76	76	74	71	68	64	62	62	64	66	67	68	69	70	71	70	71	

TOTAL NUMBER OF OBSERVATIONS = 7977 MEAN = 70.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN CORPORATION

DIURNAL VARIATION OF TEMPERATURE AT 8 FEET(DEG F)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	23	22	24	24	24	23	23	23	24	27	30	29	32	31	31	30	29	26	26	25	25	24	24	23	26
2	23	25	25	25	24	24	25	25	25	26	28	28	29	30	31	30	28	27	28	28	28	28	28	27	27
3	27	27	26	27	27	26	27	27	28	30	30	31	31	31	33	32	31	29	26	24	24	23	22	22	28
4	22	21	21	20	19	19	20	18	20	22	23	24	26	26	25	24	22	18	17	17	16	15	14	14	21
5	14	12	11	9	8	10	11	9	8	9	12	13	14	15	15	16	15	15	14	14	13	12	11	9	12
6	7	4	5	4	4	4	2	2	3	10	14	19	22	22	23	22	20	14	12	11	11	10	13	11	12
7	11	12	12	11	10	9	9	8	12	16	19	20	22	23	22	21	19	15	15	15	15	13	13	13	15
8	12	12	11	11	11	12	11	10	10	11	12	13	14	13	14	12	10	8	6	4	2	2	0	0	10
9		0		-2	-2	0	-2	-1	0	1		8	11	12	15	15	13	9	9	8	8	10	10	8	6
10	8	6	9	6	9	9	12	12	13	17	19	20	21	22	23	23	21	19	18	16	16	16	14	14	16
11	13	14	13	12	10	10	11	11	11	18	23	26	28	30	30	31	28	22	19	18	17	17	18	18	19
12	18	19	18	18	17	17	18	19	22	27	30	33	34	35	33	32	30	28	25	25	23	22	22	22	25
13	21	18	18	20	20	20	19	19	20	22	27	29	30	29	28	27	26	24	22	21	19	16	13	13	22
14	14	14	13	12	12	12	9	11	12	15	20	24	27	28			27	24	21	20	18	19	17	16	18
15	15	15	15	15	15	16	16	16	19	24	26	28	30	33	34	32	29	25	23	24	23	23	23	22	23
16	22	21	21	21	18	19	18	18	20	23	28	29	29	28	29	26	25	24	24	23	23	20	18	19	23
17	15	17	18	17	17	20	21	21	22	27	30	33	35	36	37	38	37	35	34	34	33	31	29	27	28
18	27	26	25	23	25	25	24	25	25	30		41	44	45	45	44	43	37	34	33	32	32	33	32	33
19	33	31	31	29	28	27	25	24	27	32	37	39	39	41	41	41	39	36	31	29	31	30	29	28	33
20	29	28	24	27	27	27	26	25	28	32	38	40	42	44	44	43	40	35	32	29	30	31	29	29	33
21	29	27	27	27	27	28	28	30	30	33	38	40	44	45	43	43	40	38	37	36	36	34	32	31	35
22	31	32	31	30	27	28	28	29	29	30	31	32	33	33	33	32	31	30	30	30	30	29	30	29	31
23	29	28	28	28	28	27	27	26	26	26	28	28	30	30	30	29	28	27	26	23	25	24	23	23	28
24	23	22	19	15	17	16	14	16	17	22	26	28	29	30	30	31	30	27	22	19	20	18	19	17	22
25	18	19	17	16	16	16	16	15	17	22	25	30	33	33	33	33	31	26	23	22	20	19	19	19	23
26	18	10	17	17	16	15	15	15	18	24	27	30	32	32	33	32	31	28	25	24	24	23	22	21	24
27	19	19	19	18	19	19	17	16	19	25	30	32	34	35	36	35	33	29	27	25	24	23	23	22	25
28	21	20	20	20	19	19	18	17	22	28	32	36	38	39	40	41	38	32	29	26	26	25	22	25	27
29	23	23	22	22	21	20	19	21	21	26	31	33	34	36	36	36	35	31	27	27	23	19	20	20	27
30	18	18	17	16	14	12	13	14	14	21	27	29	31	33	34	34	34	33	26	25	25	26	23	24	24
31	23	23	23	23	23	22	23	22	23	32	36	40	42	42	42	42	39	35	32	31	29	28	29	30	31
MEAN	21	20	20	19	18	18	18	18	19	23	27	29	31	32	32	31	29	27	24	23	23	22	21	21	

TOTAL NUMBER OF OBSERVATIONS = 8823 MEAN = 24.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF TEMPERATURE AT 30 FEET(DEG F)
TRAILER NO. = 23 PERIOD(1/ 1/77 TO 1/31/77)

											HOUR													
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	22	22	22	22	23	22	21	22	22	25	27	27	28	28	28	28	26	25	24	23	23	23	22	21	24
2	21	23	23	23	21	22	23	22	22	23	24	25	26	27	28	27	26	26	26	26	27	27	26	26	25
3	25	25	25	25	25	25	25	26	26	27	29	29	30	30	31	30	29	28	25	22	22	21	20	20	26
4	20	19	19	19	18	18	18	17	18	20	21	21	23	24	23	22	20	17	16	15	15	14	13	12	19
5	12	11	10	9	8	8	6	7	6	7	9	10	11	12	12	13	12	12	12	12	11	10	9	8	10
6	7	6	5	5	3	3	3	1	2	7	11	17	19	20	20	20	18	14	11	10	10	11	12	10	11
7	10	11	10	11	9	8	7	6	8	13	16	17	19	20	19	18	17	14	13	12	12	11	10	10	13
8	10	10	9	9	9	10	9	9	7	8	8	10	11	10	10	9	6	4	2	0	0	0	0	0	7
9	-1	-2		-4	-4	-3	-4	-4	-2	0		4	8	10	11	12	10	6	6	5	6	7	7	6	3
10	6	6	7	6	7	7	9	9	11	14	16	17	18	19	20	21	19	17	16	15	15	15	14	13	14
11	13	14	13	13	11	9	11	11	11	15	21	24	27	28	29	29	27	24	19	17	17	16	17	18	19
12	18	19	17	18	18	16	18	16	21	25	29	30	31	33	32	31	28	27	25	24	23	22	22	21	24
13	20	18	18	20	19	18	18	19	20	20	25	27	28	28	26	25	25	24	23	22	19	16	16	14	22
14	14	14	13	12	11	12	11	11	12	13	19	23	25	25			25	23	22	20	17	18	17	16	17
15	15	15	14	14	13	14	14	15	17	22	24	25	27	34	32	30	28	25	23	24	24	25	23	23	22
16	24	22	21	20	18	18	19	19	19	21	26	27	28	26	27	24	23	23	23	23	22	21	21	20	23
17	19	18	18	18	19	19	21	21	22	25	28	31	34	35	36	37	37	35	34	34	33	32	32	31	28
18	29	29	29	26	25	26	25	26	26	30		40	43	43	43	44	42	37	34	33	32	32	34	32	34
19	33	32	32	30	28	27	24	25	27	30	36	38	39	40	40	40	39	38	36	32	31	31	31	30	33
20	31	29	28	28	29	27	28	27	28	32	37	39	42	43	44	43	40	36	33	31	31	30	31	29	34
21	29	28	27	28	29	29	30	30	31	33	38	40	43	44	42	42	41	40	38	37	37	36	36	34	36
22	32	33	32	29	27	27	27	28	28	29	31	32	32	33	33	32	31	30	30	30	29	29	29	28	30
23	28	28	28	27	27	26	26	25	25	25	26	27	28	29	29	28	27	26	26	24	24	24	22	22	27
24	22	21	19	16	16	16	14	16	16	19	24	27	28	29	30	30	29	27	24	21	20	19	19	17	22
25	17	18	17	19	17	16	16	15	16	20	24	28	31	31	31	31	29	26	23	21	19	19	19	18	22
26	18	17	17	17	16	16	15	14	17	22	25	27	29	30	31	31	29	25	24	23	23	22	21	20	22
27	19	18	18	18	19	18	17	16	17	24	28	29	32	33	34	34	32	29	26	24	23	23	22	22	24
28	21	20	21	20	21	20	19	18	21	26	31	35	36	37	38	39	37	32	28	27	26	27	27	25	28
29	25	24	23	24	22	21	19	22	21	24	30	32	34	35	35	35	34	32	30	27	26	24	20	20	27
30	19	19	16	16	16	13	15	14	12	19	25	28	30	32	33	34	34	33	31	28	26	26	25	25	24
31	24	23	25	23	24	24	24	23	22	30	35	39	41	41	41	41	39	36	33	32	30	28	29	30	31
MEAN	20	19	20	18	18	18	17	17	18	21	25	27	29	30	30	30	28	26	24	23	22	22	21	21	

TOTAL NUMBER OF OBSERVATIONS = 8633 MEAN = 23.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF TEMPERATURE AT 100 FEET(DEG F)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	23	23	23	23	22	22	21	21	21	24	26	26	27	27	27	26	25	24	23	23	23	23	22	21	24
2	21	23	23	22	21	22	22	22	22	23	23	23	24	26	26	26	25	25	25	26	25	26	25	25	24
3	25	25	24	24	24	24	24	25	25	26	27	28	29	29	29	29	28	27	24	21	21	21	20	20	25
4	20	19	19	18	18	19	19	18	18	19	20	20	22	22	22	21	19	16	16	16	16	15	15	13	19
5	12	11	11	10	9	8	8	7	6	6	8	9	11	12	11	12	12	12	11	11	11	10	9	8	10
6	9	8	7	7	4	4	4	3	5	8	11	15	17	19	19	19	17	14	12	11	11	12	14	12	11
7	13	11	11	12	10	9	8	7	8	12	15	16	18	18	18	17	16	14	13	12	12	11	10	10	13
8	12	11	10	9	10	10	10	11	8	7	8	9	10	9	9	8	6	4	2	0	0	0	0	0	7
9	0	-1		-2	-3	-2	-3	-2	-1	0		3	7	9	11	11	9	6	6	6	6	7	7	7	3
10	7	7	7	7	6	8	9	13	10	14	16	16	17	19	20	20	18	17	16	16	16	15	15	15	14
11	16	16	15	14	13	12	13	13	13	15	20	23	25	27	29	29	27	24	21	20	20	19	22	21	20
12	20	21	20	20	18	17	18	18	21	24	27	29	30	32	31	30	28	26	25	24	22	21	22	21	24
13	21	19	20	21	19	19	18	19	20	20	24	26	26	26	25	24	24	23	22	22	20	16	17	16	22
14	15	15	14	13	13	14	13	12	14	14	18	21	23	24			24	22	21	19	18	18	17	17	18
15	17	16	15	14	14	14	15	16	17	21	23	24	26	28	31	29	28	26	24	24	24	26	25	25	22
16	24	22	21	20	19	19	20	21	21	22	25	26	27	25	26	23	23	22	23	23	22	22	21	21	23
17	21	20	20	20	20	21	21	22	23	25	27	30	32	34	34	36	36	34	33	33	33	32	32	31	28
18	31	31	31	27	26	27	27	27	28	32		39	41	42	42	43	42	38	36	36	35	35	35	35	35
19	35	34	34	33	31	29	26	25	28	30	34	36	37	38	38	39	38	37	37	33	31	31	31	32	34
20	32	30	29	30	30	29	28	28	28	31	35	38	40	41	42	41	39	35	32	32	31	32	33	32	34
21	32	30	29	29	29	29	31	30	31	33	36	38	42	42	42	42	41	40	39	37	38	38	38	37	36
22	35	33	32	29	27	27	28	28	28	28	29	30	31	31	31	31	30	30	30	29	29	29	29	28	30
23	27	27	27	26	26	25	25	24	24	24	25	26	27	27	27	27	26	26	25	25	24	24	22	22	26
24	22	21	20	17	17	16	16	17	18	19	23	26	27	28	29	29	29	28	25	23	21	20	20	19	23
25	19	19	19	20	18	18	18	17	17	19	23	28	30	30	30	31	29	26	24	22	21	21	21	20	23
26	20	20	18	18	17	15	16	16	17	21	23	26	27	28	29	29	29	27	25	23	23	22	22	21	23
27	20	19	19	19	20	19	18	17	17	23	25	28	30	31	32	32	31	28	26	24	23	23	24	23	24
28	23	23	23	23	23	20	20	20	22	25	30	34	35	37	38	38	35	31	30	29	26	27	30	27	28
29	28	27	26	26	24	24	22	25	24	24	29	31	33	34	34	33	33	31	29	27	26	24	22	22	28
30	20	20	18	17	17	16	15	16	15	18	24	26	29	31	32	33	34	33	33	30	27	27	26	27	25
31	27	26	27	27	27	27	25	25	25	29	34	37	39	39	39	39	37	36	34	34	31	30	31	31	32
MEAN	21	21	21	20	19	19	18	18	19	21	24	26	27	28	29	29	27	26	24	23	23	22	22	22	

TOTAL NUMBER OF OBSERVATIONS = 8835 MEAN = 23.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF TEMPERATURE AT 200 FEET(DEG F)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	21	21	21	21	21	20	20	20	19	22	24	24	25	25	25	25	24	22	22	21	21	21	20	20	22
2	23	21	21	21	20	20	20	20	20	21	22	22	23	24	25	24	23	23	23	24	23	24	24	23	23
3	23	23	22	22	22	22	23	23	24	25	26	26	27	27	28	27	26	25	24	19	19	19	18	18	24
4	18	18	17	17	17	17	17	17	17	17	18	19	21	21	20	19	17	14	15	13	13	13	12	10	17
5	10	9	9	8	8	7	6	5	4	4	6	7	8	9	9	9	9	9	9	9	9	8	7	6	8
6	5	4	3	3	2	2	2	2	3	6	9	12	15	17	17	17	15	12	10	10	9	11	12	10	9
7	10	10	10	10	8	7	5	5	6	10	13	14	17	18	17	16	14	12	11	10	10	9	8	8	11
8	7	8	8	9	9	9	9	9	6	5	5	6	7	7	7	5	3	1	0	0	0	0	-1	-1	5
9	-2	-3		-5	-6	-6	-6	-5	-4	-2		0	4	6	8	9	7	4	3	3	4	5	5	5	1
10	5	5	5	5	5	6	7	8	8	12	14	14	16	17	18	18	16	15	15	15	14	14	13	14	12
11	15	14	14	14	13	13	12	13	14	15	19	22	25	26	27	27	26	23	20	20	20	20	21	20	19
12	19	19	19	19	17	17	17	17	19	23	26	26	29	32	30	28	26	25	23	22	21	20	20	20	23
13	18	17	17	18	18	18	17	17	18	18	22	24	25	25	23	22	22	22	21	21	19	15	16	15	20
14	14	14	13	13	12	13	12	12	13	14	16	19	22	22			22	21	19	17	16	16	16	15	16
15	14	14	14	14	13	14	15	15	16	19	21	22	24	27	29	28	26	25	24	23	23	24	23	23	21
16	22	21	20	19	16	19	20	21	21	20	23	25	25	23	24	21	21	21	22	21	21	21	20	19	22
17	20	21	21	19	19	20	20	21	22	24	26	28	30	32	33	34	34	33	32	33	32	32	31	31	28
18	30	30	29	27	26	27	28	27	29	32		37	39	40	40	41	39	36	34	34	34	34	33	33	34
19	33	32	33	33	30	30	26	26	27	29	33	35	36	36	37	38	37	37	36	33	31	30	30	31	33
20	31	30	29	29	29	29	28	28	28	31	34	36	39	40	41	39	38	35	32	32	31	31	31	31	33
21	31	30	29	29	29	29	30	31	31	32	35	37	40	40	40	40	39	38	37	36	36	36	36	35	35
22	33	31	30	20	24	24	26	26	26	26	28	29	29	30	30	29	29	29	28	28	27	27	27	27	28
23	26	25	25	25	24	24	23	23	23	22	24	24	25	25	25	25	24	24	24	23	23	23	21	21	24
24	20	19	19	16	16	16	15	16	17	19	21	23	24	25	26	26	26	25	24	23	22	19	18	18	21
25	18	18	18	18	17	17	17	16	17	18	21	25	27	27	28	28	27	24	22	20	19	19	19	18	21
26	19	19	18	18	17	16	16	15	15	19	21	24	26	28	29	26	28	25	24	22	22	22	22	20	22
27	19	18	18	18	18	18	17	16	17	21	25	26	28	30	30	30	30	27	25	23	22	22	21	21	23
28	21	23	22	21	21	19	20	20	22	24	28	31	33	34	35	36	34	30	30	29	26	26	28	26	27
29	26	25	24	24	22	22	21	23	23	23	28	29	31	31	32	32	31	30	29	26	25	23	21	20	26
30	19	19	18	17	17	16	15	16	15	17	22	24	26	29	30	31	32	32	31	31	28	26	26	26	24
31	25	25	25	25	26	25	24	25	25	29	32	36	38	38	38	37	36	35	33	33	31	30	30	29	31
MEAN	19	19	20	18	18	17	17	17	18	19	23	24	26	27	27	27	26	24	23	22	21	21	21	20	

TOTAL NUMBER OF OBSERVATIONS = 8637 MEAN = 21.

: INDICATES CALIBRATION DURING THE HOUR

HOURLY TOTAL SOLAR RADIATION(LANGLEY)
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
												HOUR													
1	0	0	0	0	0	0	0	1	6	21	34	16	34	20	18	11	5	0	0	0	0	0	0	0	166
2	0	0	0	0	0	0	0	0	9	18	30	28	30	32	24	10	2	0	0	0	0	0	0	0	183
3	0	0	0	0	0	0	0	0	2	5	7	7	8	7	14	8	2	0	0	0	0	0	0	0	60
4	0	0	0	0	0	0	0	0	3	12	16	25	45	31	14	7	1	0	0	0	0	0	0	0	154
5	0	0	0	0	0	0	0	0	2	8	8	10	9	8	6	3	0	0	0	0	0	0	0	0	54
6	0	0	0	0	0	0	0	0	5	10	14	17	18	15	13	10	3	0	0	0	0	0	0	0	106
7	0	0	0	0	0	0	0	0	8	15	20	20	34	36	29	17	4	0	0	0	0	0	0	0	185
8	0	0	0	0	0	0	0	0	2	7	11	21	24	18	19	8	2	0	0	0	0	0	0	0	112
9	0	0		0	0	0	0	1	16	28		47	54	45	32	18	4	0	0	0	0	0	0	0	245
10	0	0	0	0	0	0	0	0	9	21	19	19	17	16	13	9	3	0	0	0	0	0	0	0	126
11	0	0	0	0	0	0	0	0	9	23	34	40	41	38	30	18	5	0	0	0	0	0	0	0	238
12	0	0	0	0	0	0	0	0	7	21	30	37	39	39	22	6	1	0	0	0	0	0	0	0	202
13	0	0	0	0	0	0	0	0	3	14	23	38	37	22	8	11	3	0	0	0	0	0	0	0	159
14	0	0	0	0	0	0	0	1	18	29	33	38	48	28		3	7	0	0	0	0	0	0	0	205
15	0	0	0	0	0	0	0	0	9	23	34	41	42	39	26	7	4	0	0	0	0	0	0	0	225
16	0	0	0	0	0	0	0	0	4	9	17	12	9	14	19	3	3	0	0	0	0	0	0	0	90
17	0	0	0	0	0	0	0	0	7	13	18	34	34	30	19	17	4	0	0	0	0	0	0	0	176
18	0	0	0	0	0	0	0	1	15	18		35	44	38	32	21	9	0	0	0	0	0	0	0	214
19	0	0	0	0	0	0	0	1	10	23	33	40	42	40	33	17	4	0	0	0	0	0	0	0	243
20	0	0	0	0	0	0	0	0	10	23	33	36	43	42	27	15	6	0	0	0	0	0	0	0	235
21	0	0	0	0	0	0	0	0	6	17	25	24	36	41	19	12	3	0	0	0	0	0	0	0	183
22	0	0	0	0	0	0	0	0	4	10	7	8	10	9	7	5	1	0	0	0	0	0	0	0	61
23	0	0	0	0	0	0	0	0	0	2	8	8	15	11	10	7	3	0	0	0	0	0	0	0	64
24	0	0	0	0	0	0	0	1	13	22	30	40	45	43	53	30	7	0	0	0	0	0	0	0	289
25	0	0	0	0	0	0	0	3	26	43	55	66	63	51	37	23	9	0	0	0	0	0	0	0	376
26	0	0	0	0	0	0	0	2	15	29	35	44	46	43	36	23	9	1	0	0	0	0	0	0	283
27	0	0	0	0	0	0	0	2	16	30	38	44	46	43	36	24	10	0	0	0	0	0	0	0	289
28	0	0	0	0	0	0	0	1	13	26	!38	45	47	44	35	24	10	0	0	0	0	0	0	0	284
29	0	0	0	0	0	0	0	1	13	25	36	45	47	44	37	22	11	0	0	0	0	0	0	0	281
30	0	0	0	0	0	0	0	1	12	26	38	45	47	44	36	24	10	1	0	0	0	0	0	0	284
31	0	0	0	0	0	0	0	1	13	26	36	45	47	44	31	20	6	0	0	0	0	0	0	0	271
TOTAL/10	0	0	0	0	0	0	0	2	29	60	76	98	110	98	74	43	15	0	0	0	0	0	0	0	

TOTAL NUMBER OF OBSERVATIONS = 8848 TOTAL = 6043.

! INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

TEMPERATURE CHANGE FROM 30' TO 100' (DEG F*10)
TRAILER NO. = 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	4	4	1	0	0	0	1	0	-1	-4	-7	-4	-8	-7	-6	-5	-3	0	0	0	0	1	1	3	-22
2	4	0	0	0	0	0	0	0	0	-4	-7	-7	-7	-8	-8	-4	-1	-1	-1	-1	-1	-1	-1	-1	-33
3	-1	0	-1	-1	-1	-1	-1	0	-1	-2	-3	-3	-3	-3	-4	-4	-3	-1	-1	0	0	0	0	0	-34
4	0	1	0	0	2	4	4	11	6	-3	-4	-4	-7	-6	-4	-3	-2	0	1	0	0	4	7	1	07
5	0	1	2	9	15	6	0	3	1	-1	-1	-1	-4	-4	-4	-2	0	0	0	0	0	0	0	2	08
6	6	8	12	8	12	8	14	24	21	2	3	-18	-10	-8	-7	-7	-1	3	9	12	8	14	16	12	69
7	18	5	11	8	10	4	3	4	0	-5	-7	-8	-8	-8	-7	-5	-1	0	3	0	0	1	0	0	11
8	0	1	2	5	11	6	7	17	4	-1	-2	-5	-5	-4	-5	-3	-1	0	0	0	0	1	1	3	15
9	3	6		12	10	7	8	10	7	0		-14	-5	-3	-3	-5	-2	0	0	2	4	1	1	7	21
10	9	8	5	8	5	7	1	0	0	-2	-3	-3	-3	-3	-2	-2	0	0	1	8	7	5	13	20	32
11	18	10	24	14	23	24	14	23	27	8	-1	-4	-7	-8	-8	-6	-2	5	11	26	31	25	40	26	139
12	25	25	32	23	13	17	11	6	2	-3	-5	-7	-7	-9	-5	-2	0	0	2	1	1	2	5	4	63
13	3	8	15	7	10	7	6	4	3	0	-5	-7	-9	-7	-4	-3	-1	0	2	8	12	7	17	23	40
14	10	8	10	14	19	28	18	17	20	10	-4	-5	-9	-6			-2	0	1	0	6	4	8	13	76
15	7	10	13	8	7	6	13	13	3	-4	-6	-8	-9	-7	-6	-3	0	14	12	7	12	9	9	17	51
16	6	9	8	4	12	17	20	23	19	9	-3	-4	-4	-5	-6	-3	-2	0	3	3	2	10	13	9	62
17	21	24	24	17	10	21	9	12	12	3	-3	-6	-5	-5	-5	-5	-3	0	0	0	6	11	7	11	78
18	15	19	15	23	11	10	23	24	24	25		-7	-10	-9	-9	-7	-4	2	10	17	22	28	12	25	114
19	15	10	16	24	25	16	14	15	13	1	-4	-6	-7	-9	-8	-6	-1	3	15	22	9	5	7	15	83
20	7	12	22	26	22	20	14	21	10	5	-4	-6	-8	-8	-7	-6	-2	2	6	20	13	17	17	16	93
21	15	15	22	16	13	12	12	7	9	4	-4	-3	-7	-9	-6	-4	-1	0	3	3	10	16	21	25	75
22	21	4	0	-2	-1	0	0	0	-2	-3	-3	-4	-5	-5	-4	-3	-2	0	-1	-2	-2	-1	-1	-1	-28
23	-1	-1	-1	-1	-1	-1	-1	-1	-2	-3	-5	-5	-7	-7	-6	-5	-3	0	0	4	3	1	3	1	-34
24	0	1	10	15	13	12	22	19	16	0	-3	-8	-9	-9	-8	-7	-4	0	21	30	18	17	12	19	71
25	24	22	24	12	16	21	23	22	15	0	-1	-7	-10	-10	-9	-8	-4	2	4	4	12	15	16	18	81
26	15	21	18	16	20	6	20	20	6	-6	-8	-8	-10	-10	-9	-7	-4	0	1	1	2	4	9	9	42
27	13	10	13	13	14	15	14	13	12	-5	-9	-10	-10	-10	-9	-8	-5	0	2	3	6	9	11	7	33
28	11	19	17	20	16	12	21	27	10	0	-5	-9	-10	-9	-9	-7	-5	1	17	23	13	12	29	11	87
29	20	26	20	21	15	29	27	20	21	0	-5	-8	-9	-9	-8	-5	-1	0	3	5	4	9	22	10	96
30	14	13	20	21	16	31	11	22	29	-3	-3	-5	-6	-9	-6	-5	-4	0	17	30	14	12	19	18	104
31	24	23	18	20	26	21	22	30	27	3	-4	-7	-10	-9	-8	-6	-3	0	8	16	7	11	7	7	91
MEAN	11	11	13	12	12	12	11	14	10	-0	-5	-8	-9	-9	-8	-6	-4	1	5	8	7	8	11	11	

TOTAL NUMBER OF OBSERVATIONS = 8500 MEAN = 5.

: INDICATES CALIBRATION DURING THE HOUR

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                 TEMPERATURE CHANGE FROM 30' TO 200' (DEG F*10)
                  TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                          HOUR
       1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24  MEAN
DAY

  1  - 6  - 5  -14  -13  -13  -13  - 9  -16  -18  -22  -25  -22  -24  -23  -20  -16  -14  -19  -18  -17  -18  -15  -10  - 8    -17
  2  - 7  -14  -15  -10  -13  -15  -18  -18  -14  -18  -21  -25  -25  -23  -20  -21  -20  -19  -20  -20  -19  -19  -19  -20    -20
  3  -19  -19  -20  -20  -20  -20  -20  -19  -20  -21  -22  -22  -22  -22  -24  -23  -21  -19  -13  -19  -18  -17  -14  -14    -21
  4  -13  -11  -14  -13  -10  - 6  - 8    0  - 6  -22  -23  -20  -19  -22  -22  -22  -22  -19  -12  -15  -19  -10  - 5  - 9    -16
  5  -15  -11  -11  - 3    2  - 4  -15  -10  -12  -20  -19  -21  -23  -24  -24  -23  -21  -20  -20  -20  -17  -15  -13  -14    -17
  6  -13  - 7  - 5  - 7    0  - 1    5   13   12  -10  -12  -40  -33  -27  -26  -27  -19  - 7  - 1    3  - 2    5    2    0     -9
  7    3  - 8    3  - 6  - 3  -10  -11  - 8  -14  -26  -27  -25  -16  - 9  -15  -15  -21  -14  - 7  -12  -13  -13  -14  -14    -14
  8  -13  - 9  - 5    2    0  - 3    0    9  - 7  -21  -24  -26  -27  -26  -26  -26  -24  -23  -22  -22  -21  -17  -16  -13    -16
  9  -12  - 8       - 4  - 9  -12  - 6  - 5  - 8  -19       -34  -29  -27  -27  -27  -24  -18  -19  -13  -11  -14  -16  - 6    -17
 10  - 3  - 4  - 9  - 6  -10  - 6  -14  -15  -17  -18  -15  -21  -22  -21  -22  -20  -19  -17  -12  - 2  - 5  - 6    3    9    -13
 11    8    0    9    5   19   27    1   13   23    0  -20  -23  -25  -25  -25  -23  -19  - 4    7   23   24   29   32   21      3
 12   21   14   22   16    2   10    0  - 2  - 9  -20  -19  -20  -22  - 7  - 7  -16  -16  -16  -10  -12  -12  -10  - 7  - 9     -6
 13  -10  - 2    4  - 8  - 1  - 2  - 6  - 9  -10  -12  -25  -27  -26  -24  -23  -23  -19  -16  - 9  - 2    3    0    4   12    -11
 14    4  - 1    4   12   15   19   17   15   18   13  -23  -25  -27  -25            -21  -18  -14  -15  - 7  - 5  - 1    0     -4
 15  - 2    0    5    7    1    0    9    4  - 9  -23  -27  -23  -27  -25  -23  -21  -12    6    8    0    0  - 5  - 1    5     -7
 16  - 5    0    3  - 3    2   13   18   20   16    0  -21  -23  -23  -23  -25  -22  -20  -14  - 7  -10  - 8  - 1    0    0     -7
 17    8   29   35    9   10   10    0    8    7  - 6  -21  -25  -25  -24  -22  -22  -19  -10  - 4  - 7    0    2    1    3     -3
 18    9   14    8   19   14    8   24   21   30   22       -23  -25  -25  -25  -24  -20  - 4    3   11   19   21    6   20      4
 19    9    0   19   31   23   26   15   15    9  - 2  -23  -25  -24  -25  -24  -22  -16  - 4    4   17    3    0    0    7      0
 20    0   13   21   19   12   18    4   18    2  - 1  -22  -23  -24  -24  -22  -23  -18    0    0   14    6   10    9   19     -0
 21   18   15   20   21   12    6    3   16    3  - 7  -21  -18  -24  -24  -23  -21  -16  -14  - 6    0    1    6    8   13     -2
 22   12  - 7  -14  -19  -16  -13  - 5  -10  -19  -22  -21  -21  -22  -22  -22  -21  -18  -14  -17  -19  -19  -18  -17  -17    -17
 23  -17  -18  -18  -18  -18  -18  -18  -18  -18  -19  -19  -20  -22  -26  -25  -24  -20  -14  -13  - 6  - 8  - 7  - 4  -13    -18
 24  -15  -13    0    7    9   11   23   14   10    2  -16  -25  -27  -27  -27  -25  -21  -15    8   24   21    8    0    8     -3
 25   13   10   15    9    4   11   12   15    7  -10  -20  -26  -28  -27  -26  -25  -22  - 8  - 2  - 5    1    7    6    7     -4
 26    5   15    7    4    7  - 3    5    6  - 5  -25  -27  -27  -25  -24  -16  -25  -19  -14  -11  -10  -10  - 8    0  - 1     -9
 27    2    5    1    3    1    0    5    2    5  -22  -27  -28  -29  -28  -27  -25  -20  -12  - 5  - 4  - 3    0    0  - 1     -9
 28    1   24   19   15    5    2   19   32    5  -15  -23  -26  -27  -26  -25  -24  -22  - 7   21   20    7    3   20    9      0
 29    9   20   17   12    8   16   31    9   21  - 4  -25  -27  -27  -28  -26  -24  -19  -10  - 3  - 4  - 6    0   12    3     -2
 30    0    1   13    8    6   18    1   16   32  -10  -24  -26  -26  -29  -26  -24  -21  -15    4   25    8    4   11   10     -2
 31   15   17    7   23   21   10   10   25   32  - 4  -21  -26  -27  -26  -25  -24  -19  -14    0    4    2   10    0    1     -1
MEAN  -1    1    3    2    2    2    2    4    1  -13  -23  -26  -26  -25  -24  -24  -21  -14   -7   -4   -5   -3   -1   -0

                    TOTAL NUMBER OF OBSERVATIONS =  8821     MEAN  =      -8.

          : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

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                     DIURNAL VARIATION OF BAROMETRIC PRESSURE
                      TRAILER NO. - 23  PERIOD( 1/ 1/77 TO  1/31/77)

                                         HOUR
      1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

 1   781 781 781 781 780 780 781 781 781 782 782 781 780 780 781 781 781 781 781 782 782 782 782 782   781 2
 2   782 782 783 782 782 782 792 783 783 784 784 784 783 783 783 783 783 783 783 783 783 783 783 782   783 3
 3   782 731 781 780 780 779 779 779 778 777 776 775 774 773 773 773 773 773 773 774 775 775 775 776   777 4
 4   777 777 778 779 779 779 780 781 782 783 783 783 783 783 783 783 783 783 784 784 784 784 784 784   782 7
 5   784 784 784 794 783 783 783 783 783 783 783 782 781 781 781 782 782 783 783 784 784 785 785 786   783 8
 6   785 787 787 788 788 788 789 789 790 791 791 791 791 791 791 791 791 791 792 792 791 791 791 791   790 9
 7   791 791 790 790 790 790 789 789 789 788 788 787 785 785 785 784 784 784 784 783 783 782 782 782   787 1
 8   782 781 781 781 780 780 780 780 780 780 779 779 778 778 778 778 776 778 778 779 780 780 781 781   780 5
 9   782 782     783 783 783 784 785 786 787     787 787 786 786 787 787 787 788 788 788 788 788 788   786 1
10   788 788 788 788 788 787 787 787 787 787 787 787 786 786 786 785 786 786 786 786 786 787 787 787   787 2
11   787 787 788 789 789 789 789 790 790 791 791 791 790 790 790 790 790 790 790 790 790 790 790 790   790 9
12   790 789 789 789 788 788 787 787 787 787 787 786 785 784 785 784 785 785 785 785 785 785 785 785   787 3
13   785 785 786 786 786 786 786 786 786 786 785 786 785 784 785 785 785 785 785 786 786 786 786 787   786 0
14   787 787 787 788 788 788 788 788 788 789 789 788 787 786         787 788 788 788 788 788 788 788   788 6
15   788 788 789 788 788 788 788 788 788 789 789 789 788 788 789 789 790 790 790 791 791 791 792 792   789 1
16   791 791 791 791 792 792 792 792 793 793 793 793 792 792 792 792 793 794 794 795 795 795 796 797   793 2
17   797 797 797 797 797 797 797 797 797 797 798 797 797 796 796 796 796 796 797 797 797 797 797 798   797 8
18   798 798 798 798 798 798 798 799 799 799     798 797 796 796 795 795 795 794 794 794 794 793 793   797 4
19   793 793 793 793 793 794 794 795 795 795 795 795 794 793 793 793 793 793 793 793 793 793 793 793   794 3
20   793 793 793 793 792 792 792 792 793 793 793 793 792 792 792 792 792 792 792 792 792 793 793 793   793 3
21   793 793 793 792 792 792 792 792 792 792 792 791 791 790 790 790 790 790 790 789 789 789 789 789   791 5
22   790 789 790 790 790 790 790 790 790 790 790 790 789 789 789 789 789 789 789 789 789 789 789 789   790 8
23   789 789 789 789 789 789 789 789 790 790 790 790 790 790 790 790 790 790 790 791 791 792 792 792   790 4
24   792 792 792 792 792 792 792 793 793 793 793 793 793 792 791 791 791 791 791 791 791 791 791 791   792 1
25   791 791 791 791 791 791 791 791 791 791 791 790 789 789 789 789 788 788 788 788 788 788 789 789   790 1
26   788 788 788 788 788 788 788 788 788 788 788 787 786 785 785 785 785 785 785 785 785 785 785 785   787 2
27   785 785 785 785 785 785 785 785 786 786 787 786 786 785 785 785 785 785 786 786 785 786 787 786   786 3
28   787 787 787 787 787 787 787 788 788 789 789 789 788 788 788 788 788 788 789 789 789 789 789 789   788 7
29   789 789 789 789 789 788 788 789 788 788 788 788 787 787 786 786 786 786 787 787 787 788 788 789   788 6
30   789 789 789 790 790 790 790 790 791 791 791 791 791 791 790 791 790 791 791 791 792 792 792 792   791 4
31   792 792 793 792 792 792 792 792 792 792 792 791 791 790 790 789 789 789 789 788 788 788 788 788   791 1
MEAN  758 788 789 788 788 788 788 788 789 789 787 789 788 787 787 787 787 788 788 788 788 788 788 788

                  TOTAL NUMBER OF OBSERVATIONS =  8839    MEAN  =    788.

          : INDICATES CALIBRATION DURING THE HOUR
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RADIAN
CORPORATION

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 30 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	9	8	10	7	9	3	3	4	5	3	16	17	16	16	17	18	18	14	15	13	15	12	12	13	12
2	13	15	11	14	14	16	16	14	15	17	17	16	17	16	17	17	13	12	13	11	9	21	21	14	15
3	15	12	13	10	8	8	10	11	14	13	18	20	16	18	14	16	7	3	11	5	7	7	15	14	12
4	14	14	8	4	4	4	3	4	4	3	7	10	10	9	7	7	7	3	3	3	0	3	1	0	6
5	0	0	0	1	1	0	0	4	0	0	0	0	0	1	2	4	4	2	2	1	2	2	1	0	1
6	0	0	0	0	2	1	1	0	1	0	1	1	4	4	5	8	9	4	5	2	0	0	2	1	3
7	1	1	4	4	7	5	6	5	5	3	7	12	16	17	17	18	9	7	7	5	4	7	5	4	8
8	5	4	3	4	4	4	5	6	2	4	5	3	5	7	8	7	9	11	9	9	9	8	6	6	6
9	6	3		3	2	0	0	1	1	1		1	1	2	3	8	12	14	14	5	4	5	6	3	5
10	4	6	7	4	4	4	6	11	12	18	18	15	15	15	13	15	11	7	8	5	3	3	4	4	9
11	3	1	2	2	1	1	1	1	2	3	3	3	2	4	5	5	6	8	5	5	6	5	5	5	4
12	4	5	5	5	6	4	3	3	8	6	11	12	13	18	17	14	4	3	7	4	2	4	4	4	7
13	3	3	4	2	3	4	2	1	0	2	4	4	6	3	7	5	2	3	3	4	2	4	4	3	4
14	2	0	0	0	1	4	3	0	1	1	1	3	3	5			6	3	2	4	2	1	3	4	3
15	5	7	0	11	12	14	12	10	11	13	15	16	11	7	7	5	5	6	5	4	3	4	4	5	9
16	7	6	9	8	3	4	4	5	4	4	8	4	1	7	5	5	1	2	1	2	3	5	4	2	5
17	4	1	1	2	2	5	2	4	4	2	3	5	4	4	3	4	3	4	4	3	1	2	1	2	3
18	3	4	2	3	2	2	3	2	2	3		2	9	8	7	9	9	9	3	4	4	5	6	5	5
19	5	3	7	6	5	6	2	2	2	3	3	3	3	5	5	3	2	1	3	4	0	0	0	1	4
20	0	0	6	3	4	4	2	4	2	2	3	2	4	3	2	9	7	7	5	6	4	4	4	4	4
21	2	2	1	2	3	1	2	3	2	5	3	2	7	10	9	9	5	4	5	4	4	4	4	6	5
22	5	4	5	5	4	4	4	5	3	3	0	2	2	3	3	4	1	0	0	0	1	2	1	1	3
23	2	3	3	2	2	2	2	3	2	2	2	3	2	4	6	6	4	4	1	2	1	1	1	1	3
24	0	0	1	1	3	1	2	1	0	1	0	2	3	5	3	3	2	2	4	8	2	1	2	3	2
25	3	3	3	2	1	3	2	0	2	1	3	2	7	11	12	11	11	8	8	3	3	4	4	5	5
26	3	4	5	5	5	3	4	4	3	5	10	12	14	14	16	13	14	12	11	10	4	2	3	3	8
27	4	1	2	4	5	5	3	2	3	5	5	7	6	7	11	11	13	11	10	7	2	3	3	3	6
28	1	2	2	1	4	1	5	3	3	3	2	4	8	9	8	8	8	9	7	5	2	2	5	1	5
29	3	2	1	3	2	5	5	5	5	4	3	4	3	6	10	11	10	4	1	3	1	4	1	2	5
30	1	2	1	1	3	2	1	1	2	1	3	4	3	5	4	3	4	0	4	5	1	1	1	2	3
31	3	4	2	5	4	4	2	4	4	2	4	3	5	9	6	9	6	5	3	6	4	5	4	8	5
MEAN	5	4	5	4	5	4	4	4	4	5	6	7	7	9	9	9	8	6	6	5	4	5	5	5	

TOTAL NUMBER OF OBSERVATIONS = 8840 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 100 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	13	11	12	9	12	4	4	5	5	4	18	19	18	17	19	21	20	16	19	16	18	15	14	16	142
2	17	18	14	17	16	19	18	15	17	18	18	17	17	18	19	19	14	13	15	12	11	22	22	15	173
3	16	13	14	11	9	9	11	13	15	14	20	22	17	19	15	20	10	5	14	6	8	8	18	16	144
4	18	12	10	5	5	5	4	8	7	5	8	12	12	11	9	8	8	3	3	6	0	2	0	0	77
5	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	5	5	2	2	1	3	3	1	0	28
6	0	0	0	1	2	1	1	0	0	0	1	1	4	5	6	9	10	6	7	3	1	0	2	2	39
7	3	3	6	6	9	7	9	7	8	4	8	13	16	18	18	19	10	8	9	6	5	9	7	5	91
8	7	5	4	4	3	5	6	5	4	4	5	3	6	7	9	8	10	12	11	11	11	10	7	8	75
9	7	6		4	0	0	0	1	1	1		1	0	2	3	8	14	16	17	6	5	7	7	3	51
10	5	7	9	5	5	5	10	13	14	19	20	16	15	16	14	16	12	9	10	7	4	3	5	2	112
11	4	1	2	4	3	2	1	0	0	3	2	3	3	5	6	6	7	9	7	5	7	6	4	4	49
12	3	6	5	6	7	6	4	5	10	7	14	14	14	20	20	16	5	4	8	4	2	4	4	4	83
13	4	3	2	2	3	6	1	0	0	3	5	4	6	4	8	5	3	3	4	5	4	3	2	1	40
14	0	0	0	0	0	6	2	2	3	1	1	3	3	6			8	4	3	4	2	3	6	6	36
15	7	11	8	15	16	17	16	13	14	14	16	17	12	8	8	6	5	6	8	6	4	3	5	5	111
16	6	8	12	12	4	4	6	7	5	6	9	5	2	7	6	5	0	2	0	3	4	3	2	1	52
17	2	4	6	3	1	4	4	7	6	2	4	5	5	5	4	5	4	6	6	4	0	2	2	0	48
18	2	0	1	4	3	2	2	2	3	5		3	11	9	8	10	11	12	3	4	4	5	9	4	54
19	7	3	11	9	4	7	2	2	2	4	4	4	4	7	7	4	3	1	4	1	0	0	0	0	43
20	0	0	3	4	2	3	2	4	3	2	3	2	5	3	3	10	9	10	6	7	5	5	4	5	43
21	3	1	3	3	3	1	2	5	3	6	3	1	8	11	10	11	6	5	5	5	4	4	5	6	55
22	9	6	8	6	5	5	6	5	4	4	1	2	3	4	3	5	1	0	1	0	2	2	2	1	48
23	2	4	3	3	3	2	3	3	3	3	2	4	2	5	7	7	6	7	2	2	1	2	2	1	44
24	1	1	2	3	3	3	3	1	0	1	0	3	4	5	4	4	4	4	3	12	6	1	1	2	31
25	4	4	2	2	2	3	4	1	3	2	3	2	8	12	13	13	13	11	12	4	2	4	5	5	61
26	3	6	5	5	4	3	3	1	2	6	12	13	15	16	18	15	16	15	15	12	4	2	4	3	92
27	5	3	4	3	5	5	5	2	2	5	5	8	6	7	12	12	14	13	13	10	3	2	2	2	73
28	1	3	1	1	5	2	5	4	5	2	2	4	9	10	9	9	10	12	11	8	2	1	5	1	67
29	1	1	0	4	2	4	6	5	6	3	2	4	3	6	10	12	11	5	2	4	2	2	0	1	46
30	0	0	0	0	3	0	0	0	1	1	3	5	3	6	5	3	5	0	5	7	3	2	2	3	34
31	2	4	1	4	5	2	2	3	5	3	4	3	6	10	7	10	7	6	3	6	6	7	6	11	61
MEAN	5	5	5	5	5	5	5	5	5	5	7	7	8	10	10	10	9	8	8	7	5	5	5	5	

TOTAL NUMBER OF OBSERVATIONS = 8840 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 200 FEET
TRAILER NO. - 23   PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	15	13	13	12	15	6	5	5	5	4	19	21	20	18	20	22	21	17	22	20	21	18	17	19	16
2	20	22	20	19	20	23	23	15	19	20	20	18	19	19	21	21	15	15	17	14	12	27	26	18	20
3	20	15	15	12	9	9	12	14	16	16	22	25	19	22	17	18	9	4	13	5	8	9	19	17	15
4	17	12	10	6	6	5	3	7	6	4	6	9	10	9	7	6	6	2	3	5	1	1	1	1	6
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	4	2	2	1	3	3	1	1	2
6	1	1	1	1	1	1	1	1	1	1	1	1	3	4	5	7	9	7	4	3	1	1	1	5	3
7	2	5	6	7	7	5	9	8	9	3	7	13	16	18	19	20	9	9	8	4	3	8	7	5	9
8	6	3	2	3	1	3	3	3	3	3	3	3	4	5	7	6	7	10	9	8	8	8	6	5	5
9	5	4		3	1	1	1	1	1	1		1	1	1	3	7	15	20	21	9	5	9	9	4	6
10	5	8	13	6	6	8	14	17	18	22	23	17	17	18	15	18	14	12	13	10	5	6	6	2	13
11	5	1	4	8	8	6	1	1	1	2	1	2	3	5	6	5	7	10	8	3	7	3	1	1	5
12	1	5	4	6	7	5	4	5	11	7	14	13	15	23	22	17	7	4	9	5	3	4	4	3	9
13	4	4	1	2	1	4	2	1	1	2	4	4	7	4	9	5	2	2	4	4	3	3	1	1	4
14	0	0	0	0	0	5	3	3	5	0	0	2	2	5			7	4	2	3	3	7	10	7	3
15	14	15	11	17	19	20	17	15	16	16	17	18	13	9	8	6	3	3	8	8	4	2	7	4	12
16	6	8	15	15	6	3	8	8	5	6	11	5	1	6	4	5	1	2	1	4	5	4	2	1	6
17	1	5	11	8	5	3	8	11	11	3	4	4	4	4	3	4	3	6	7	4	1	3	3	1	5
18	1	1	1	1	2	1	2	3	5	4		2	10	9	8	10	12	17	4	1	2	3	13	5	6
19	7	4	14	10	3	6	2	2	1	2	3	3	3	7	6	3	3	1	2	1	1	1	1	1	4
20	1	1	1	2	3	1	2	8	7	3	2	2	5	2	3	10	10	12	4	6	2	2	2	5	4
21	3	1	3	3	2	2	1	4	2	8	2	1	8	11	11	12	7	4	5	6	4	2	3	6	5
22	9	5	9	6	6	6	7	7	5	4	1	3	3	3	2	4	1	1	1	1	3	2	1	1	4
23	1	2	2	1	1	1	1	2	1	2	1	2	1	4	6	7	5	6	3	1	1	1	1	1	3
24	1	1	1	3	1	2	1	1	2	2	1	2	3	5	4	3	4	5	3	12	11	6	3	2	4
25	1	1	1	2	4	1	1	1	1	1	3	2	8	12	13	13	14	13	14	6	3	1	2	3	5
26	5	8	3	5	3	7	4	3	3	7	13	12	15	16	18	16	18	18	18	15	4	3	2	3	10
27	4	9	6	2	3	4	8	4	2	6	5	8	7	8	12	12	15	13	16	13	5	4	1	4	8
28	3	6	3	3	5	5	4	4	7	2	1	4	8	9	9	8	9	12	11	9	3	1	4	2	6
29	1	1	1	4	3	3	2	2	6	2	2	4	2	6	10	12	11	7	4	5	3	1	2	1	4
30	1	1	1	1	2	1	1	1	1	1	3	4	3	6	4	3	4	1	2	5	7	7	5	6	3
31	4	4	2	2	1	3	2	1	1	2	2	3	6	10	7	10	7	7	1	4	6	7	8	12	5
MEAN	5	6	6	6	5	5	5	6	6	6	7	7	8	9	10	10	9	8	8	7	5	5	6	5	

TOTAL NUMBER OF OBSERVATIONS = 0840   MEAN = 7.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	
1	202	197	192	192	194	159	103	228	123	139	191	201	205	211	211	208	209	207	202	194	203	210	214	215	194	.42
2	199	203	212	198	197	200	197	202	199	203	199	199	199	208	204	202	196	194	187	189	179	192	181	171	196	.73
3	190	172	166	164	152	146	157	162	160	150	171	181	188	185	191	177	176	218	222	292	232	227	210	210	185	.44
4	210	209	218	234	222	218	204	205	216	239	277	290	276	278	245	198	218	17	124	309	161	163	207	297	228	77
5	310	259	201	212	224	155	212	140	142	283	360	10	349	331	296	296	292	286	261	273	286	271	264	224	268	28
6	170	238	190	203	164	163	237	195	231	138	49	256	221	199	198	206	196	170	104	158	262	241	139	111	190	39
7	70	116	113	129	154	162	144	120	146	172	201	203	215	217	205	198	196	171	134	108	133	144	138	113	154	91
8	104	123	127	87	88	144	149	179	271	271	284	282	325	302	299	333	304	326	301	295	295	299	283	275	288	75
9	312	291		276	245	218	239	169	159	137		89	64	89	60	205	204	196	197	168	130	208	193	105	181	51
10	93	139	165	107	116	128	181	188	188	193	196	194	193	192	189	195	193	181	181	142	117	131	108	106	160	112
11	221	72	251	167	102	10	17	211	87	117	41	22	25	244	236	202	201	174	125	112	130	109	134	151	135	49
12	160	145	139	101	118	82	97	136	190	194	203	211	210	219	215	223	207	261	177	144	54	219	139	139	167	83
13	150	100	91	127	97	129	120	110	108	81	112	97	244	201	324	52	139	184	223	209	220	250	205	212	146	40
14	118	270	40	25	163	179	236	92	192	39	41	29	267	345			348	281	235	166	104	162	173	181	166	36
15	167	193	154	177	171	178	177	177	188	182	178	191	186	187	280	203	140	161	188	189	168	173	188	165	180	111
16	158	153	189	194	162	137	182	197	150	145	219	208	257	175	147	336	296	180	139	242	252	232	215	144	189	52
17	211	155	205	115	97	128	155	170	171	75	103	106	77	76	120	115	130	139	130	135	233	85	271	257	135	48
18	340	246	215	242	261	184	222	181	207	101		64	215	204	209	207	196	197	61	117	110	126	169	88	184	54
19	164	101	184	176	88	146	343	91	99	98	65	15	334	307	286	338	19	153	189	230	202	46	13	213	104	43
20	193	9	215	148	155	142	140	143	73	55	32	4	237	236	258	205	204	201	83	140	120	125	176	132	154	43
21	133	331	80	119	224	105	176	176	123	159	66	21	214	217	217	229	215	136	153	151	171	171	197	210	171	55
22	218	191	196	157	111	119	114	135	132	97	95	217	210	200	110	41	340	312	255	232	261	285	300	312	186	48
23	308	312	318	320	317	315	315	305	305	303	288	359	332	47	10	9	336	313	321	251	178	207	321	237	313	44
24	52	141	215	230	171	185	131	169	132	88	48	324	39	20	13	31	9	348	245	234	197	103	93	81	93	31
25	117	113	167	194	138	133	182	47	131	123	41	348	229	213	219	223	206	200	194	137	88	93	128	124	151	61
26	138	120	132	135	107	100	91	81	79	176	190	192	202	200	209	203	200	202	201	175	94	100	109	103	148	92
27	134	124	124	102	131	147	134	105	102	191	207	215	219	235	204	209	219	213	202	186	116	106	148	160	164	73
28	72	155	73	153	192	117	142	144	218	96	140	297	301	295	295	255	225	209	204	191	99	171	203	100	173	67
29	183	145	27	195	84	117	115	163	164	103	40	3	51	10	2	20	8	14	338	126	243	245	116	13	72	46
30	285	231	201	15	214	312	195	149	12	152	67	44	49	15	4	48	19	357	201	204	124	107	105	127	85	34
31	118	153	118	137	154	222	151	141	91	64	19	4	240	207	219	204	197	176	131	157	125	116	131	163	150	61
MEAN	152	157	166	163	155	151	163	157	152	136	94	313	238	232	233	216	217	207	186	183	165	168	173	160		

TOTAL NUMBER OF OBSERVATIONS = 8805 MEAN = 174.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 100 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	190	180	187	191	188	164	149	242	123	145	192	202	205	211	211	210	210	208	202	200	205	210	201	200	194
2	201	203	208	198	197	200	198	202	199	202	199	198	199	208	204	202	197	195	188	190	186	194	181	171	196
3	178	171	166	164	159	147	160	163	161	152	171	179	186	184	190	176	176	216	220	290	226	223	209	209	184
4	214	214	221	235	230	233	218	211	223	235	277	288	279	275	244	199	215	356	88	303	158	144	180	287	232
5	287	243	258	171	215	89	205	149	230	259	295	340	302	297	298	299	298	295	269	281	291	282	280	267	271
6	132	232	316	111	126	122	223	208	236	119	37	260	223	203	199	205	195	171	90	185	336	49	140	158	176
7	156	160	137	146	152	166	156	139	155	166	196	202	211	212	202	196	197	178	149	115	145	154	142	125	165
8	149	126	137	112	77	122	139	163	272	276	291	299	318	310	311	315	312	313	305	300	300	306	296	287	297
9	295	281		276	251	213	261	117	132	119		62	68	51	53	199	198	188	189	176	132	184	173	119	171
10	127	149	178	141	141	163	186	188	187	188	194	193	192	190	187	192	193	184	187	177	155	178	135	114	172
11	164	82	190	183	183	193	355	70	85	96	20	25	349	235	226	195	195	173	141	120	136	110	119	142	141
12	151	146	122	137	131	106	130	151	186	185	197	206	204	212	209	216	213	251	176	157	44	242	151	165	173
13	182	137	103	144	105	125	145	135	145	95	115	113	241	267	303	43	133	191	232	214	232	257	196	244	166
14	51	359	27	350	21	125	169	129	168	320	35	14	251	304			303	283	230	176	140	194	186	190	224
15	183	189	173	176	170	175	177	182	185	179	177	191	185	177	272	215	140	166	191	193	192	175	206	183	184
16	166	164	187	193	164	153	193	205	179	153	215	205	250	175	144	318	272	189	189	265	278	266	239	148	200
17	195	195	198	187	159	136	186	182	182	123	103	100	81	68	115	111	101	136	129	115	141	42	337	287	137
18	295	198	170	243	270	116	183	173	167	124		21	212	201	207	210	200	199	103	120	116	130	186	128	175
19	178	161	200	194	119	155	311	65	76	83	61	350	293	292	292	300	11	72	140	207	44	344	37	97	73
20	101	86	212	168	161	138	166	176	179	112	30	310	241	245	238	202	201	195	88	141	119	116	168	139	162
21	163	196	55	97	213	125	118	139	119	146	77	1	207	214	212	223	211	187	153	145	177	157	190	209	165
22	208	240	195	158	116	124	126	140	133	105	110	190	185	177	97	19	317	289	207	218	240	261	279	292	181
23	288	294	301	303	302	299	297	287	285	284	270	303	305	313	327	324	305	305	321	270	316	339	302	304	301
24	3	90	164	276	147	181	125	163	190	100	32	296	8	303	308	307	309	313	259	198	194	168	124	99	181
25	83	89	103	155	170	90	142	149	124	119	20	270	227	215	218	221	207	204	195	165	142	99	127	126	154
26	165	166	137	155	126	162	148	146	122	181	197	198	208	207	214	208	205	208	209	182	113	136	117	114	168
27	145	198	167	121	138	157	178	151	124	192	211	219	219	232	209	216	220	214	203	196	161	176	139	167	182
28	136	181	174	127	185	181	130	142	184	79	5	277	290	275	269	258	227	212	201	200	127	140	210	168	188
29	163	184	102	178	154	123	117	150	185	70	26	303	225	319	319	330	333	330	331	65	149	234	222	351	175
30	339	208	237	234	216	351	193	87	291	153	76	32	3	335	342	37	15	331	162	173	174	184	169	170	207
31	153	143	127	119	128	173	249	129	120	99	15	65	232	207	216	203	197	183	134	152	134	119	144	159	152
MEAN	168	175	171	171	163	150	172	158	168	143	102	255	236	237	234	228	221	216	184	186	165	179	180	171	

TOTAL NUMBER OF OBSERVATIONS = 8832 MEAN = 183.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 200 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	199	196	196	201	198	186	187	240	144	165	199	208	210	216	217	215	214	212	207	205	210	215	207	208	202 42
2	208	209	208	204	203	206	204	207	205	206	204	202	201	209	208	207	203	202	197	199	198	200	190	182	202 73
3	182	175	171	171	165	157	167	169	167	159	175	182	193	191	196	185	185	216	226	286	230	227	215	215	190 44
4	215	215	222	232	234	250	238	221	229	239	278	289	280	278	250	208	218	6	93	300	5	112	113	295	245 77
5	320	268	303	155	233	127	194	140	197	238	255	293	286	289	284	303	302	297	276	288	297	295	308	316	273 28
6	198	249	337	136	118	119	194	9	347	127	50	224	221	205	204	208	198	183	111	217	322	196	164	184	178 39
7	197	186	162	168	170	177	172	163	172	173	203	205	215	217	209	203	206	193	169	140	166	169	151	140	180 91
8	120	136	144	118	187	116	128	150	270	274	288	302	320	310	314	319	312	320	307	303	302	308	305	295	290 75
9	291	281		278	267	215	280	103	128	131		77	109	44	58	179	204	197	198	190	162	190	192	176	184 51
10	160	171	195	175	175	191	195	196	195	195	200	199	198	197	194	198	241	194	198	200	192	201	181	182	191 12
11	200	196	203	205	207	194	161	85	309	105	52	32	279	245	229	202	203	188	160	142	152	126	127	126	175 49
12	151	162	157	175	168	143	163	182	192	194	201	209	206	216	212	218	213	241	195	190	244	248	173	203	194 83
13	167	170	162	169	117	134	176	172	164	116	118	115	225	261	303	42	143	189	229	216	230	334	110	251	173 40
14	268	279	137	319	5	127	133	144	149	259	98	279	228	300			312	297	237	193	189	203	205	203	223 36
15	199	198	190	188	181	187	190	194	195	187	185	196	195	201	273	224	152	185	208	215	216	193	220	205	198 11
16	187	185	196	203	193	200	220	223	213	174	219	208	236	185	141	332	236	190	215	284	298	292	272	226	218 52
17	199	216	210	201	193	172	243	198	195	171	132	119	83	78	125	129	117	139	133	93	68	47	360	47	142 48
18	217	108	119	40	251	139	184	181	168	143		47	217	207	212	211	200	202	185	142	136	145	197	175	173 54
19	188	188	206	197	153	157	259	41	112	54	68	14	326	300	298	306	360	65	122	131	248	209	225	139	175 43
20	161	133	196	190	194	169	193	198	201	201	51	276	258	253	243	206	205	206	86	143	122	75	147	164	183 43
21	212	281	51	104	212	210	110	129	129	151	128	319	210	219	217	225	215	198	169	163	195	177	202	219	186 55
22	215	212	204	171	128	135	141	148	140	119	149	183	176	171	106	40	298	206	199	218	225	244	263	291	183 48
23	281	272	285	295	292	286	286	276	267	261	251	297	289	315	332	324	304	311	328	281	344	333	299	321	297 44
24	335	80	144	265	156	178	131	170	190	160	167	281	4	339	319	328	319	329	278	210	204	209	192	192	220 31
25	127	110	61	170	191	92	144	173	132	149	35	255	227	219	223	223	213	214	206	198	198	105	126	142	169 51
26	200	180	156	181	175	197	190	193	176	190	198	199	208	207	214	208	206	208	211	190	154	180	143	164	189 92
27	170	207	197	169	153	177	197	187	187	198	213	220	219	230	210	217	221	215	206	205	186	193	189	193	198 73
28	192	208	203	196	201	198	165	173	201	142	13	268	285	273	267	256	226	216	220	219	166	159	231	226	213 57
29	144	171	177	176	176	138	113	137	194	95	40	309	302	344	328	352	352	359	351	58	109	222	238	235	148 46
30	258	216	215	240	210	290	209	124	254	154	68	26	360	341	334	23	352	354	156	178	207	205	204	201	231 34
31	187	178	156	155	140	171	190	142	141	136	30	133	206	213	221	209	201	195	158	163	155	142	163	170	169 51
MEAN	198	196	183	187	166	172	162	170	185	169	156	238	235	241	237	231	225	217	196	198	199	193	195	200	

TOTAL NUMBER OF OBSERVATIONS = 8839   MEAN = 198.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN CORPORATION

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	7	4	6	2	2	0	0	3	4	0	12	10	10	9	8	8	7	5	6	7	6	5	3	4	6
2	3	4	3	2	2	2	2	2	4	4	5	4	6	6	7	7	6	5	5	4	5	9	7	6	5
3	4	3	4	2	2	3	3	4	5	5	6	4	6	7	5	6	4	-3	4	2	2	2	1	0	4
4	0	0	0	0	-1	0	0	0	1	0	5	5	4	3	1	3	4	32	39	40	49	44	47	50	13
5	50	50	50	49	49	50	50	50	50	50	50	50	50	50	50	47	49	50	50	50	50	50	50	50	50
6	50	50	50	50	50	50	50	50	50	50	50	49	47	45	39	31	29	40	38	45	50	49	48	49	46
7	49	47	45	41	30	35	33	37	36	43	35	26	24	22	21	21	17	16	16	15	12	15	13	9	28
8	13	9	7	9	12	12	13	14	6	10	13	7	17	18	20	18	19	21	19	18	18	18	20	21	15
9	27	34		42	47	50	50	49	49	49		48	44	30	17	12	21	20	20	12	9	7	2	0	30
10	4	7	6	5	4	3	6	7	8	11	13	13	14	14	13	14	12	10	10	3	4	1	8	10	9
11	2	0	4	6	2	8	6	3	6	15	16	20	10	14	18	18	19	23	19	20	22	20	19	18	13
12	13	18	20	21	23	24	13	13	19	20	25	25	27	28	27	25	15	14	23	22	14	17	20	16	20
13	12	19	23	16	19	21	11	4	-1	18	21	25	31	21	30	28	18	19	23	25	18	24	24	18	20
14	15	0	-1	20	35	41	47	49	49	49	44	24	15	23			24	13	5	14	8	0	5	9	22
15	11	14	8	17	18	17	16	15	15	17	18	18	14	13	14	7	9	9	9	5	4	6	6	7	12
16	10	8	9	7	3	7	5	9	9	10	13	8	-1	14	11	29	48	48	49	46	43	37	40	46	22
17	35	47	45	42	46	35	40	32	32	45	35	27	28	21	17	17	16	16	15	11	5	8	4	6	27
18	12	12	3	10	5	3	6	1	2	7		4	19	19	19	20	20	20	14	16	18	18	16	20	13
19	18	9	17	16	21	22	11	2	6	10	9	9	9	16	15	9	10	2	12	9	-9	-12	-9	0	9
20	-7	-11	17	10	9	9	3	6	0	5	8	1	9	3	0	15	13	11	13	13	9	9	5	8	7
21	0	0	-2	7	5	-1	2	7	4	13	9	6	20	25	22	23	18	17	20	16	16	19	18	22	12
22	22	15	18	17	28	40	39	34	39	46	49	45	44	42	42	34	48	50	50	50	50	50	50	50	40
23	50	50	50	50	50	50	50	50	50	50	50	50	50	48	45	45	48	49	50	50	50	50	50	50	49
24	50	50	50	50	47	50	50	50	50	50	50	50	47	41	45	44	47	46	35	21	40	47	44	39	46
25	40	40	36	41	45	37	40	49	45	49	40	44	19	14	12	11	11	10	10	4	6	10	7	7	27
26	2	4	7	6	7	2	7	11	11	11	13	15	17	16	16	15	15	14	12	12	8	2	7	4	10
27	7	-4	1	11	11	10	5	9	14	13	12	17	16	18	21	19	19	16	15	8	0	0	4	0	10
28	-5	-3	-4	-10	3	-8	9	5	2	6	2	10	20	23	22	20	20	20	18	13	4	-1	15	-3	7
29	8	0	-5	11	6	16	17	16	17	15	9	17	11	23	31	34	33	26	2	17	10	22	2	2	14
30	4	10	5	4	15	7	1	0	4	0	13	21	16	27	24	20	32	3	27	26	10	5	21	22	14
31	33	37	26	42	39	36	23	34	36	31	38	29	28	37	35	38	34	32	26	34	30	30	28	31	33
MEAN	18	17	17	20	21	20	20	20	21	23	23	22	22	23	22	22	23	22	21	21	18	18	19	19	

TOTAL NUMBER OF OBSERVATIONS = 8820 MEAN = 20.

: INDICATES CALIBRATION DURING THE HOUR

RADIAN
CORPORATION

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 100 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	-9	-9	-9	-10	-9	-18	-18	-19	-17	-22	-9	-8	-8	-8	-8	-8	-8	-8	-8	-8	-6	-5	-7	-7	-12
2	-8	-8	-7	-7	-7	-9	-9	-9	-8	-9	-8	-8	-8	-7	-6	-6	-7	-7	-7	-7	-9	-6	-6	-7	-9
3	-6	-7	-7	-7	-9	-9	-7	-7	-7	-8	-7	-6	-6	-6	-6	-7	-8	-18	-9	-11	-10	-9	-7	-7	-10
4	-7	-8	-8	-11	-12	-12	-15	-8	-9	-13	-10	-8	-7	-6	-8	-7	-9	-19	-23	-15	-40	-31	-38	-38	-16
5	-39	-38	-38	-37	-35	-39	-40	-39	-40	-40	-40	-40	-40	-40	-40	-24	-27	-37	-40	-40	-40	-39	-41	-41	-40
6	-42	-42	-42	-42	-42	-42	-42	-42	-42	-42	-42	-40	-35	-29	-23	-14	-14	-22	-21	-31	-39	-42	-35	-34	-37
7	-39	-32	-20	-18	-15	-18	-17	-19	-14	-23	-15	-9	-7	-7	-6	-8	-10	-11	-12	-16	-17	-13	-14	-17	-17
8	-15	-17	-18	-22	-23	-17	-15	-15	-19	-17	-15	-20	-14	-11	-10	-10	-10	-10	-10	-10	-11	-12	-16	-16	-16
9	-18	-22		-33	-44	-44	-44	-44	-44	-44		-44	-42	-35	-24	-20	-9	-9	-9	-13	-17	-13	-14	-22	-29
10	-17	-13	-11	-17	-16	-15	-8	-7	-8	-8	-7	-8	-7	-8	-8	-8	-9	-9	-9	-13	-18	-22	-18	-28	-14
11	-24	-36	-29	-22	-25	-24	-32	-41	-37	-21	-27	-23	-21	-15	-13	-11	-13	-12	-14	-16	-13	-9	-12	-16	-23
12	-20	-15	-15	-15	-13	-15	-19	-14	-12	-13	-8	-9	-9	-8	-8	-9	-14	-21	-14	-20	-27	-20	-16	-23	-16
13	-20	-21	-28	-24	-26	-15	-31	-40	-42	-23	-14	-17	-12	-20	-11	-16	-23	-26	-19	-15	-19	-26	-30	-31	-24
14	-40	-44	-44	-41	-44	-21	-33	-36	-31	-37	-37	-22	-22	-15			-13	-21	-29	-19	-29	-21	-16	-18	-30
15	-14	-10	-16	-8	-9	-8	-9	-9	-9	-8	-8	-8	-6	-9	-8	-12	-14	-13	-10	-11	-13	-15	-10	-11	-12
16	-9	-9	-6	-5	-18	-20	-17	-11	-15	-12	-9	-13	-27	-11	-15	-21	-39	-31	-42	-24	-18	-22	-28	-39	-21
17	-28	-19	-16	-27	-38	-22	-19	-10	-13	-31	-19	-14	-18	-13	-21	-15	-16	-14	-15	-18	-37	-26	-28	-37	-23
18	-25	-37	-32	-39	-24	-29	-30	-25	-24	-15		-22	-8	-10	-7	-7	-7	-6	-22	-19	-17	-14	-13	-17	-21
19	-12	-23	-11	-12	-22	-11	-25	-25	-26	-20	-17	-22	-24	-12	-14	-21	-18	-34	-15	-29	-42	-39	-40	-38	-25
20	-42	-42	-20	-17	-27	-24	-28	-21	-22	-27	-17	-27	-15	-22	-21	-10	-11	-10	-15	-11	-16	-17	-17	-14	-22
21	-23	-33	-23	-22	-23	-34	-26	-16	-25	-9	-21	-29	-9	-10	-11	-10	-13	-15	-13	-14	-17	-18	-15	-13	-20
22	-11	-12	-11	-12	-16	-16	-14	-14	-18	-22	-39	-28	-25	-21	-24	-16	-38	-42	-39	-42	-35	-38	-42	-42	-27
23	-42	-40	-42	-42	-42	-42	-42	-42	-42	-42	-42	-40	-42	-26	-17	-17	-21	-19	-34	-42	-42	-42	-42	-42	-39
24	-41	-41	-39	-38	-35	-37	-39	-43	-42	-43	-43	-35	-26	-21	-24	-21	-23	-21	-29	-14	-19	-35	-37	-35	-34
25	-26	-24	-35	-33	-35	-29	-26	-38	-30	-35	-28	-31	-15	-14	-13	-13	-14	-13	-13	-23	-26	-23	-21	-18	-26
26	-29	-10	-17	-17	-20	-24	-25	-32	-29	-21	-14	-14	-13	-12	-13	-13	-13	-11	-10	-12	-20	-29	-24	-25	-20
27	-20	-25	-21	-25	-18	-18	-23	-30	-29	-19	-20	-15	-18	-18	-16	-14	-13	-13	-15	-16	-23	-30	-30	-27	-22
28	-34	-26	-34	-35	-19	-29	-20	-21	-20	-29	-29	-22	-17	-16	-15	-15	-15	-14	-15	-17	-30	-34	-18	-37	-25
29	-35	-35	-40	-22	-31	-20	-20	-19	-23	-25	-25	-22	-26	-20	-17	-17	-16	-18	-29	-22	-32	-29	-35	-4	-26
30	-38	-37	-40	-40	-24	-37	-41	-40	-33	-32	-25	-17	-24	-17	-21	-26	-19	-36	-18	-17	-30	-28	-33	-25	-31
31	-30	-22	-37	-20	-18	-29	-32	-27	-19	-27	-22	-23	-20	-15	-17	-15	-15	-16	-25	-17	-17	-16	-16	-12	-23
MEAN	-26	-26	-25	-25	-25	-25	-26	-26	-26	-25	-23	-22	-20	-17	-16	-15	-17	-19	-20	-20	-25	-25	-25	-25	

TOTAL NUMBER OF OBSERVATIONS = 8840 MEAN = -23.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF VERTICAL: BI-VANE WIND DIRECTION AT 200 FEET
TRAILER NO. - 23 PERIOD(1/ 1/77 TO 1/31/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	-13	-13	-14	-14	-14	-10	-4	-7	-9	-4	-12	-12	-14	-16	-16	-14	-15	-16	-16	-13	-11	-11	-9	-7	-13
2	-7	-7	-7	-7	-8	-9	-9	-10	-9	-9	-8	-8	-7	-7	-7	-7	-7	-6	-6	-4	-3	-7	-7	-6	-9
3	-6	-7	-8	-6	-7	-7	-10	-9	-9	-8	-8	-6	-5	-6	-5	-6	-4	-3	-6	-4	-7	-10	-14	-15	-9
4	-17	-17	-16	-14	-16	-15	-14	-16	-17	-11	-12	-10	-11	-14	-14	-16	-15	-19	-21	-16	-43	-39	-45	-44	-21
5	-44	-37	-39	-23	-30	-36	-33	-22	-29	-25	-28	-37	-28	15	27	-30	-32	-4	36	49	-14	-1	22	50	-13
6	50	50	50	50	50	50	50	50	50	50	50	42	5	-4	-12	-21	-16	-8	-10	-8	0	50	-1	-16	22
7	-15	-17	-18	-15	-14	-17	-15	-15	-12	-14	-12	-7	-7	-7	-6	-7	-4	-6	-6	-7	-6	-7	-8	-8	-12
8	-9	-3	-4	-5	0	-6	-7	-6	-6	-5	-5	-2	-4	-1	-4	-1	-5	-5	-6	-6	-6	-8	-12	-12	-7
9	-14	-17		-20	-40	-41	-40	-42	-42	-42		16	41	-9	-17	-13	-8	-7	-7	-2	-5	-1	-3	-4	-16
10	-5	-7	-4	-5	-7	-4	-4	-6	-6	-7	-7	-7	-7	-7	-6	-7	-7	-3	-6	-5	-3	-4	-3	-3	-7
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12	0	-6	-6	-5	-5	-5	-5	-4	-5	-7	-3	-5	-4	-5	-5	-5	-1	-3	-3	-6	0	-2	-5	-2	-5
13	-1	-4	1	-2	-1	-6	-2	0	0	-2	0	-5	-2	-5	-2	-1	-4	-4	-5	-5	-2	-1	-5	-7	-4
14	-15	-22	-32	-35	1	-13	-17	-21	-14	-26	-24	-6	-5	-4			-3	-2	-2	-5	-3	-6	-6	-7	-14
15	-5	-7	-5	-6	-7	-6	-7	-5	-6	-4	-4	-7	-3	-1	-1	-2	-2	-5	-7	-8	-4	-2	-6	-3	-6
16	-5	-6	-7	-6	-5	-3	-6	-6	-4	-6	-5	-3	3	-7	-1	-2	-23	-27	-29	-15	-10	-11	-20	-33	-11
17	-26	-9	-5	-6	-5	-5	-7	-6	-6	-2	-2	-3	-2	0	-2	-4	-3	-7	-8	-3	4	0	0	2	-6
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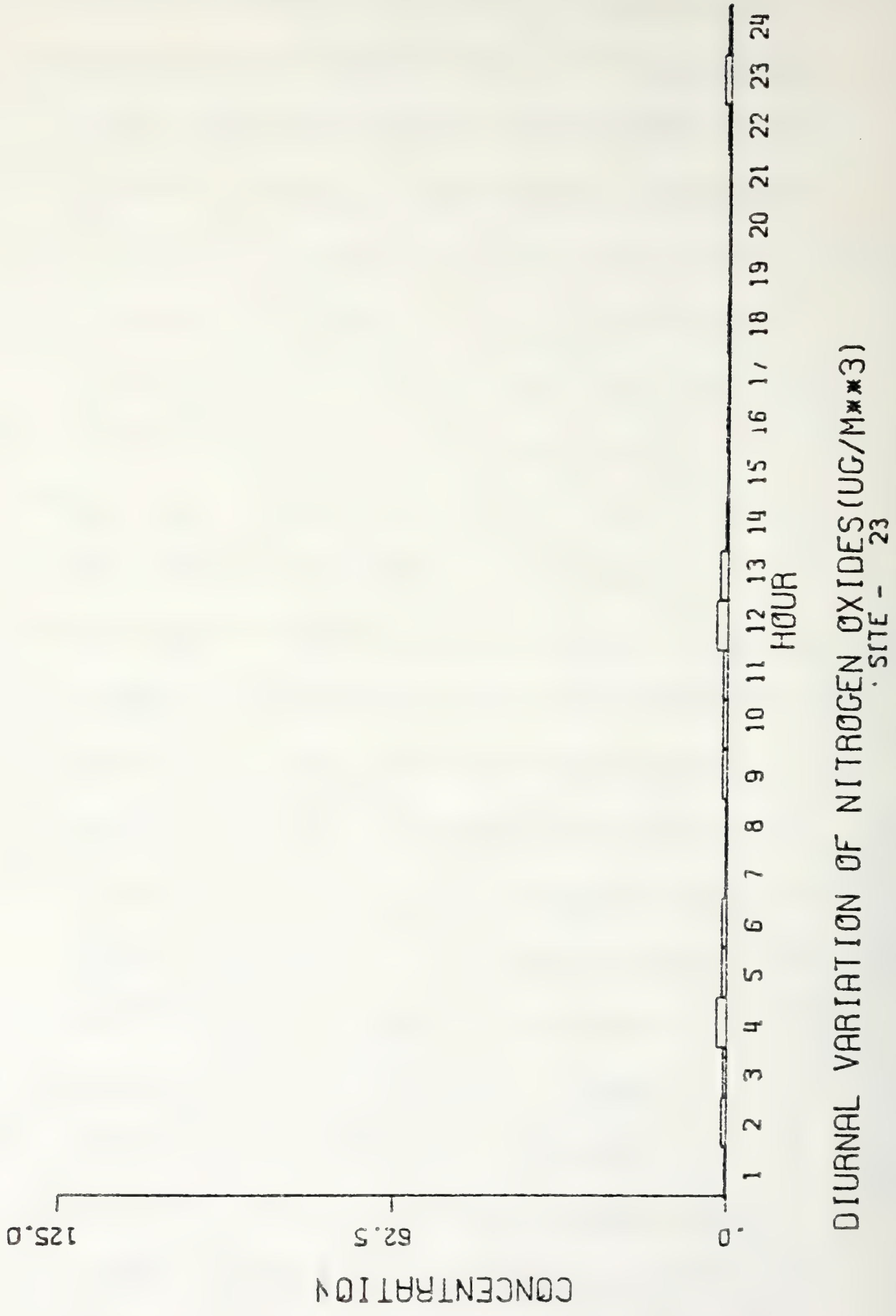
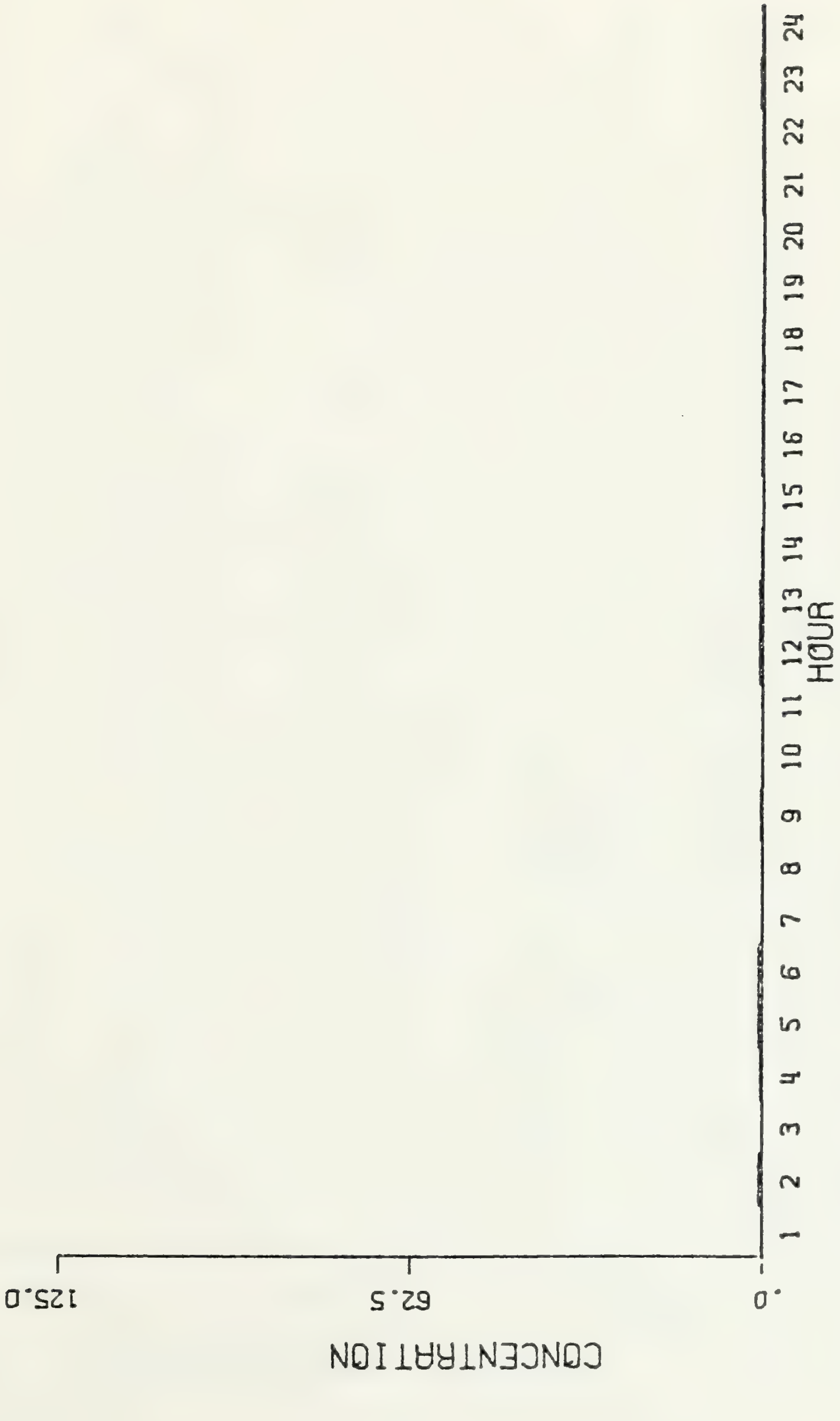
19	-6	-3	-7	-6	-4	-7	0	0	0	-2	0	-2	-5	-4	-4	-2	0	0	-2	0	2	5	2	1	-3
20	4	0	-1	-3	-2	0	-2	-4	0	0	5	0	0	0	1	-7	-6	-6	-3	-6	-4	-4	-1	-6	-3
21	0	2	-1	-2	-1	3	0	-4	-3	-6	1	0	-4	-7	-6	-6	-8	-9	-10	-10	-5	-3	-6	-10	-5
22	-11	-6	-10	-9	-10	-9	-7	-9	-10	-10	-21	-13	-15	-14	-10	-9	13	30	31	44	-25	4	49	45	-0
23	50	24	-1	43	50	43	50	49	49	49	50	33	50	-1	-24	-25	-25	-24	11	50	50	44	45	47	29
24	42	50	50	10	50	20	46	49	20	25	49	19	-9	-19	-16	-15	-15	-11	-16	-10	-7	-7	-11	-12	12
25	-23	-23	-26	-17	-14	-27	-23	0	-22	-26	-17	-7	-5	-7	-5	-5	-7	-6	-8	-5	-1	-1	-3	-4	-13
26	-3	-6	-7	-6	-4	-5	-5	-4	-5	-6	-7	-6	-6	-6	-6	-6	-7	-7	-7	-7	-3	-3	-2	0	-7
27	-4	-4	-5	-3	-6	-8	-5	-5	-8	-7	-7	-6	-5	-3	-7	-5	-6	-5	-7	-7	-4	0	0	-5	-7
28	0	-4	-2	-2	-5	-3	-6	-6	-6	0	2	-1	-5	-4	-2	-2	-6	-7	-9	-7	0	0	-5	0	-5
29	1	3	0	-5	-4	-6	-6	-4	-5	-2	0	-1	0	-1	-3	-5	-4	-3	0	-2	-2	0	0	0	-3
30	3	2	0	1	-2	2	1	0	2	0	-1	-2	-2	0	-3	-1	-2	3	-4	-6	-6	-4	-3	-4	-2
31	-3	-2	0	-3	-2	-4	-1	0	-2	-5	-2	1	-3	-7	-6	-8	-6	-7	-3	-8	-10	-12	-10	-7	-6
MEAN	-4	-4	-6	-5	-3	-5	-4	-3	-5	-5	-2	-3	-3	-6	-7	-10	-9	-7	-6	-2	-6	-3	-4	-4	

TOTAL NUMBER OF OBSERVAITONS = 8749   MEAN = -5.

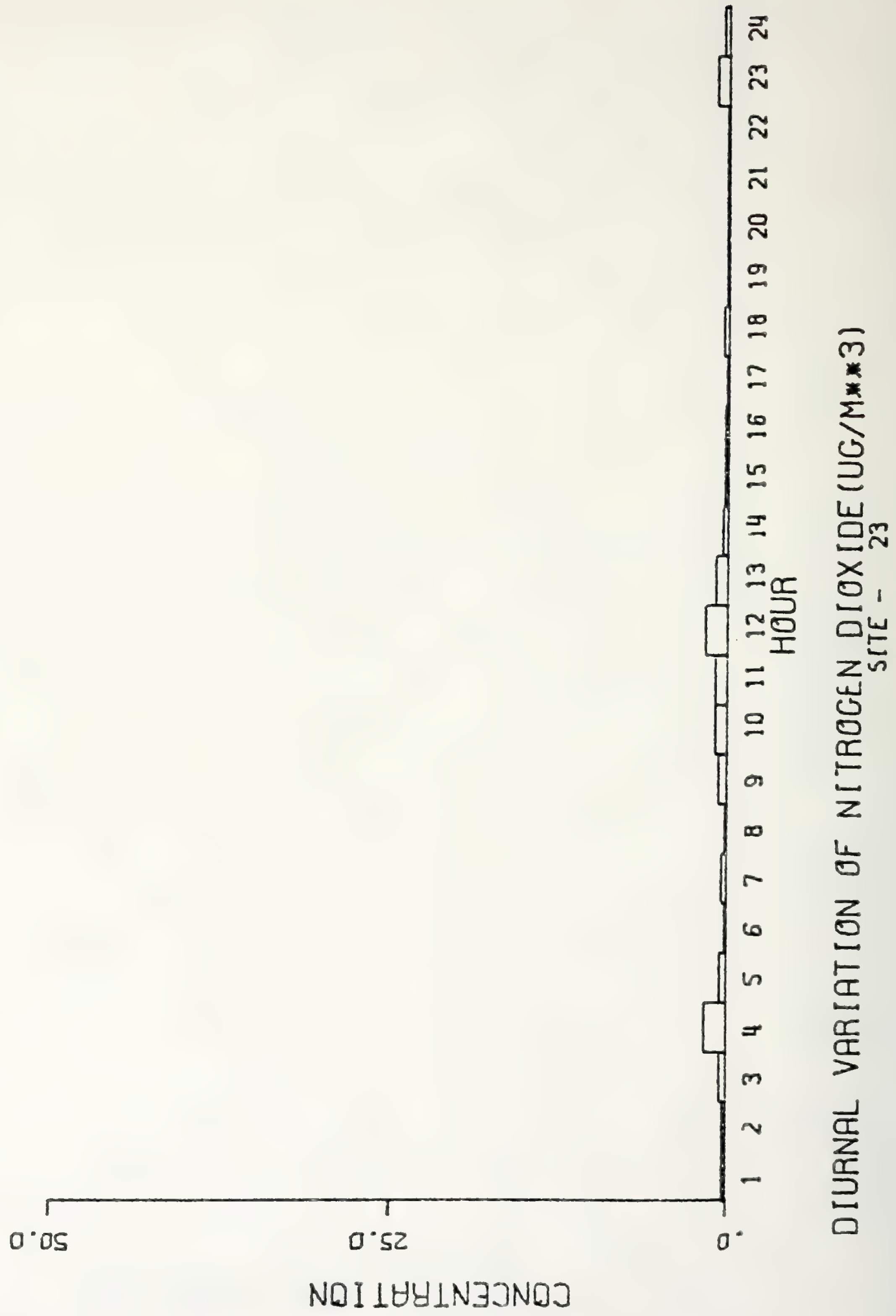
: INDICATES CALIBRATION DURING THE HOUR



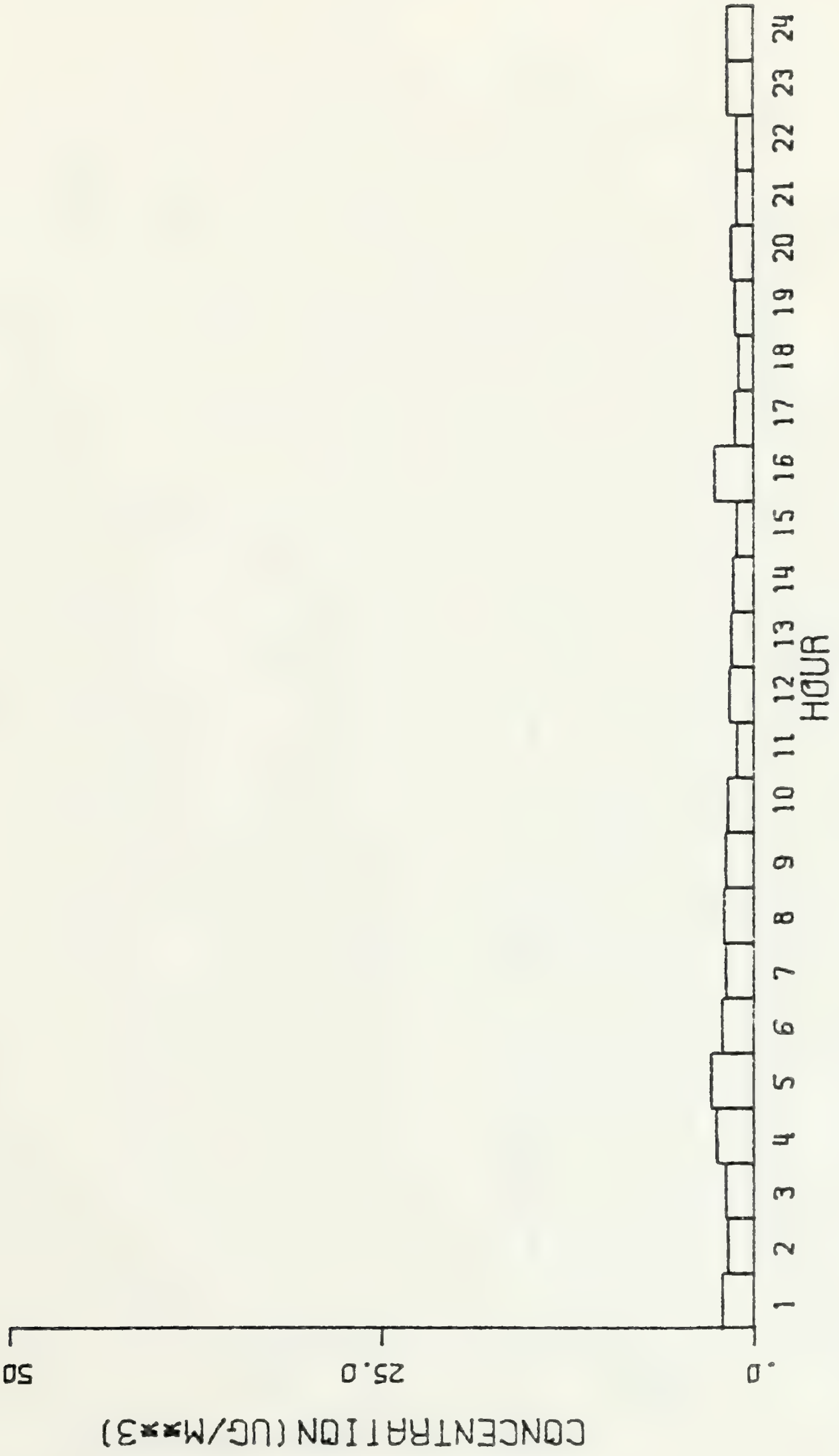
DIURNAL VARIATION OF NITROGEN OXIDES (UG/M**3)
SITE - 23



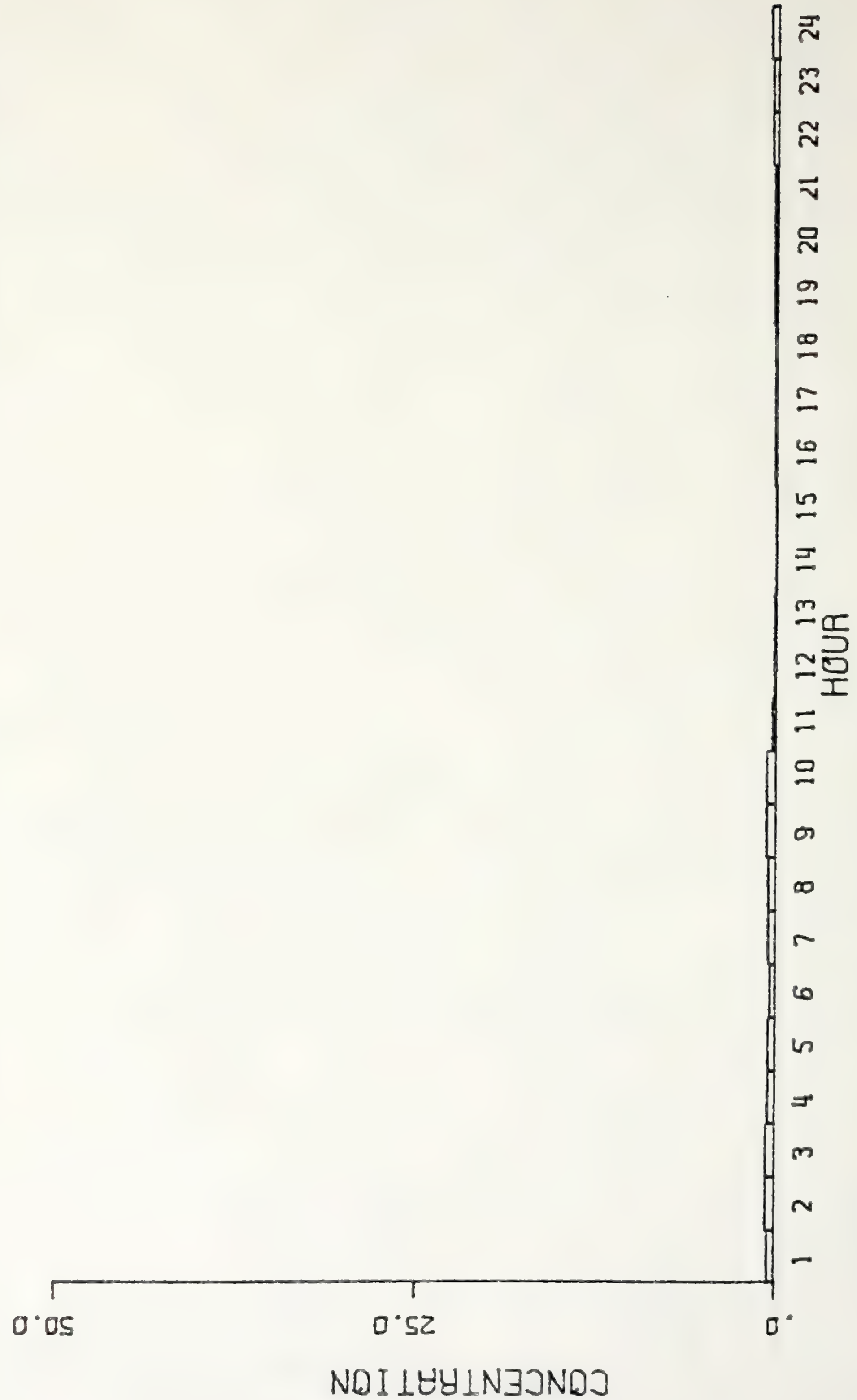
DIURNAL VARIATION OF NITRIC OXIDE (UG/M**3)
SITE - 23



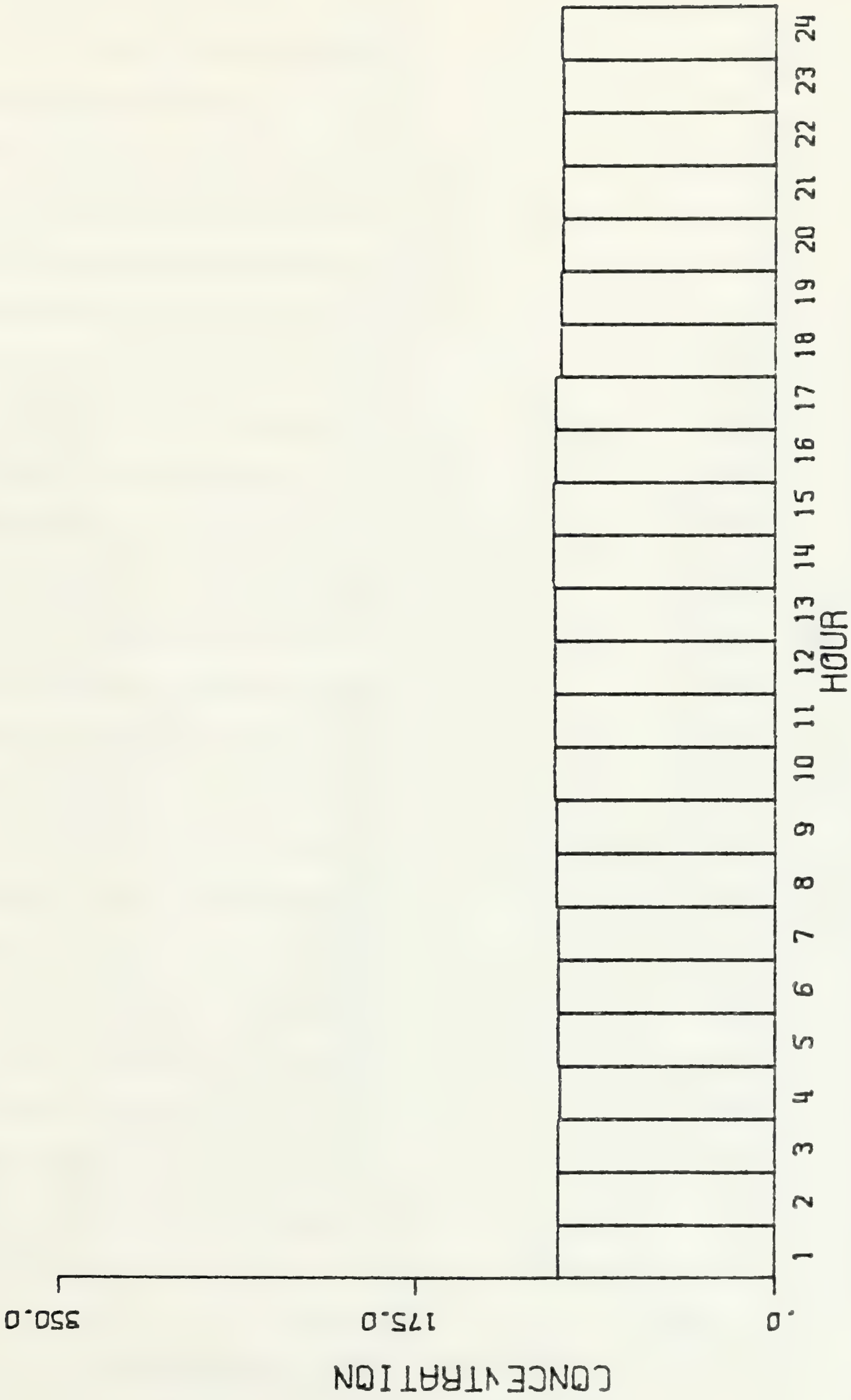
DIURNAL VARIATION OF NITROGEN DIOXIDE(UG/M**3)
SITE - 23



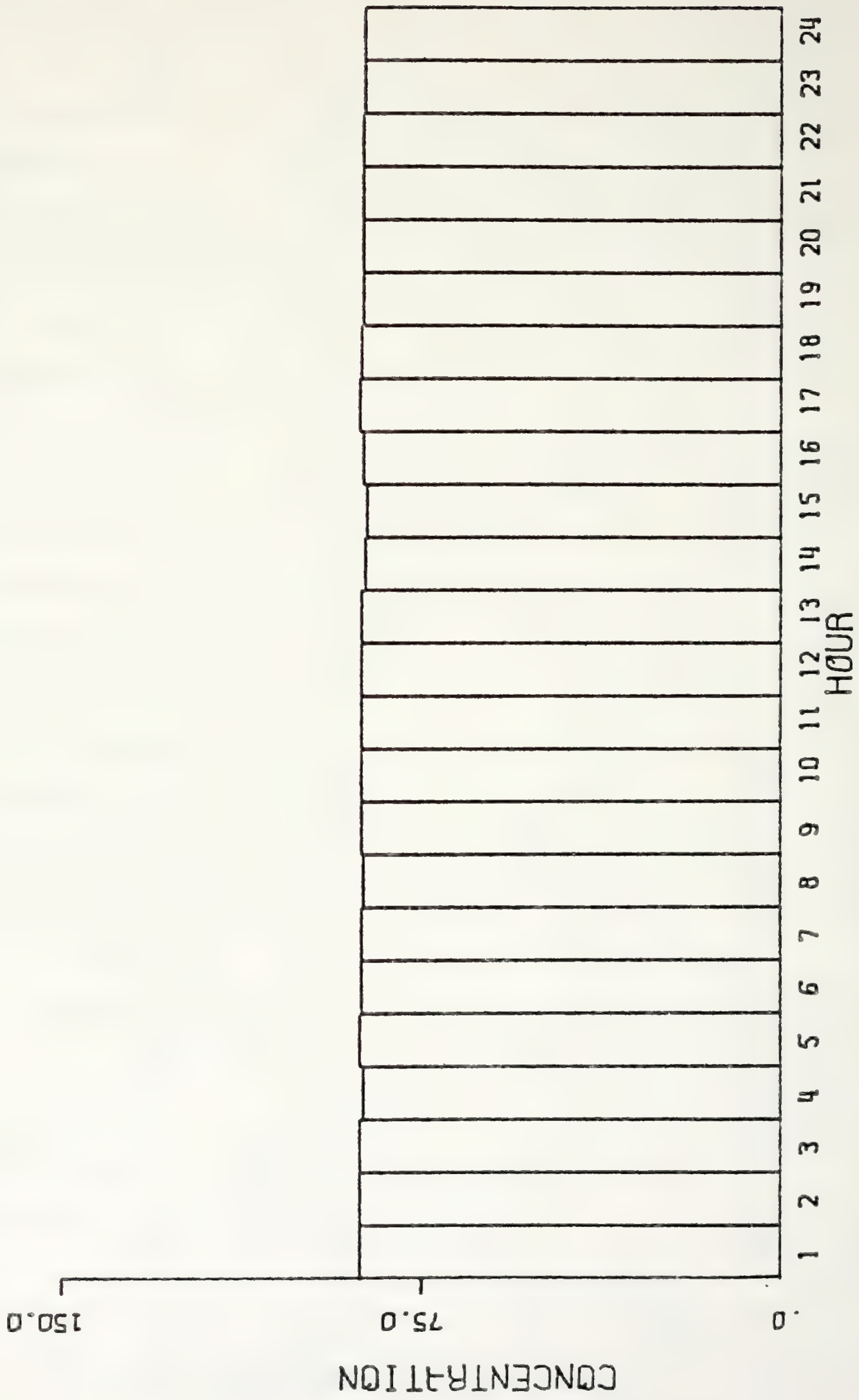
DIURNAL VARIATION OF SULFUR DIOXIDE (UG/M**3)
SITE 23



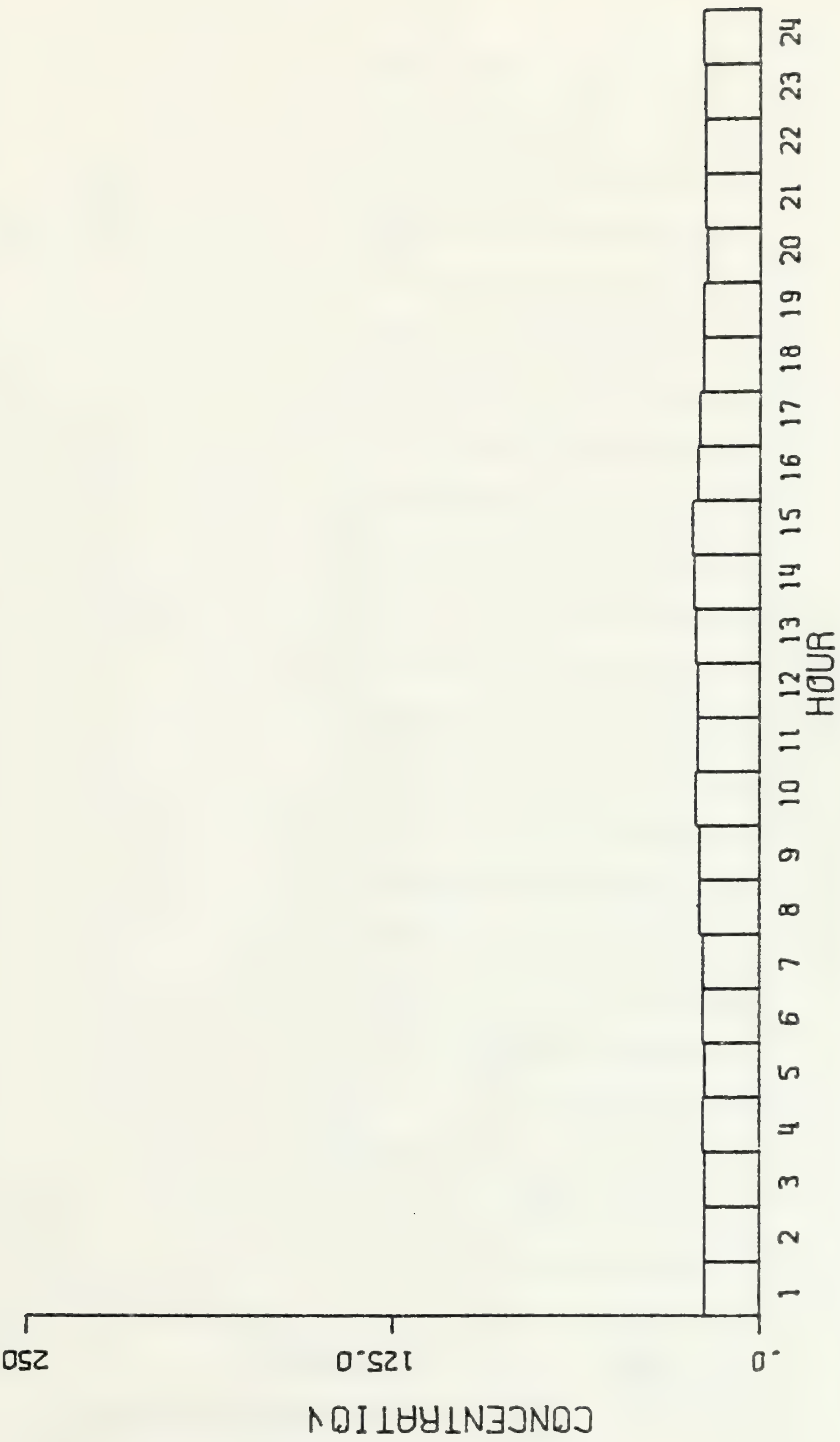
DIURNAL VARIATION OF HYDROGEN SULFIDE (UG/M**3)
SITE - 23



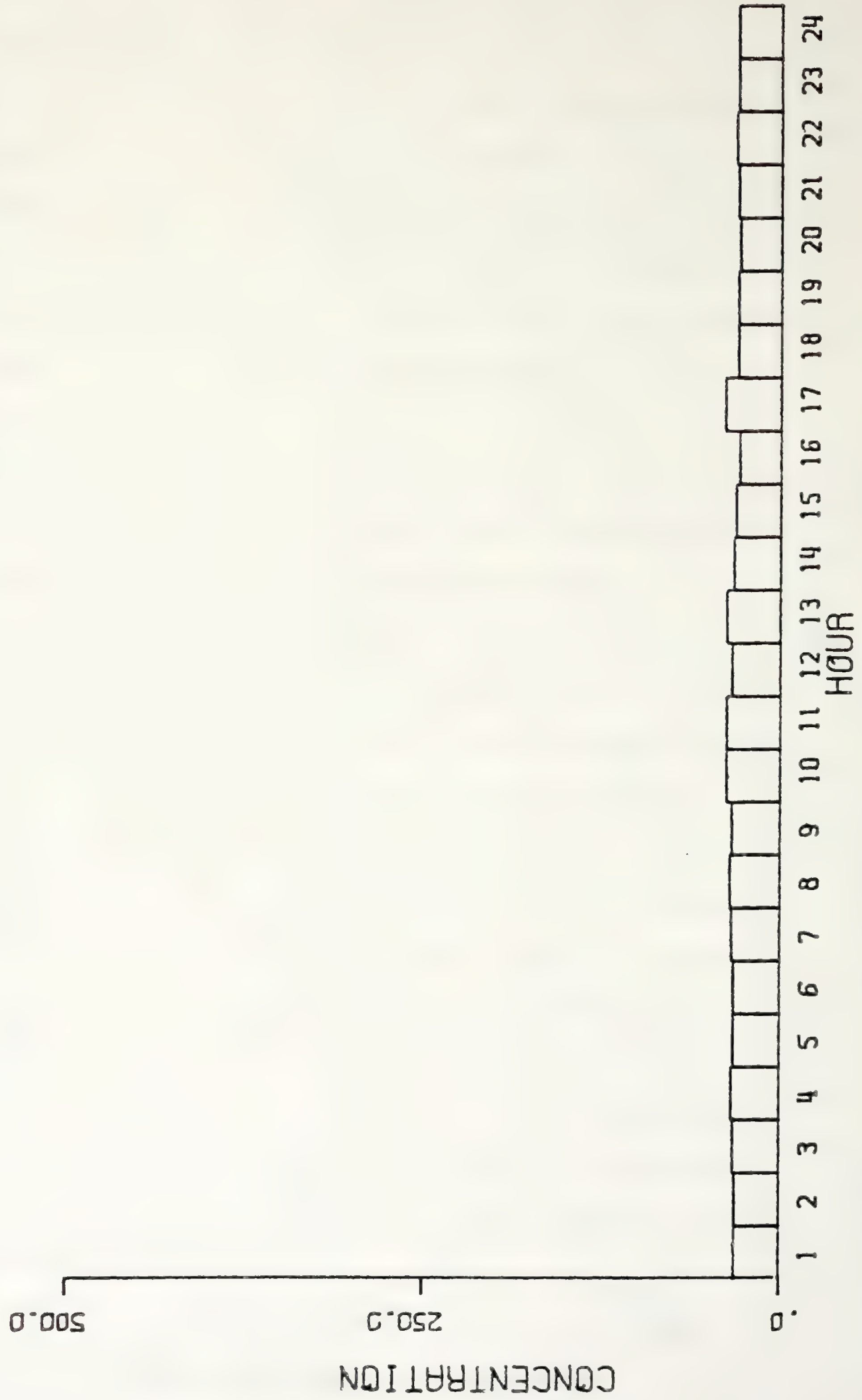
DIURNAL VARIATION OF TOTAL HYDROCARBONS(UG/M**3 X 10**-1)
SITE - 23



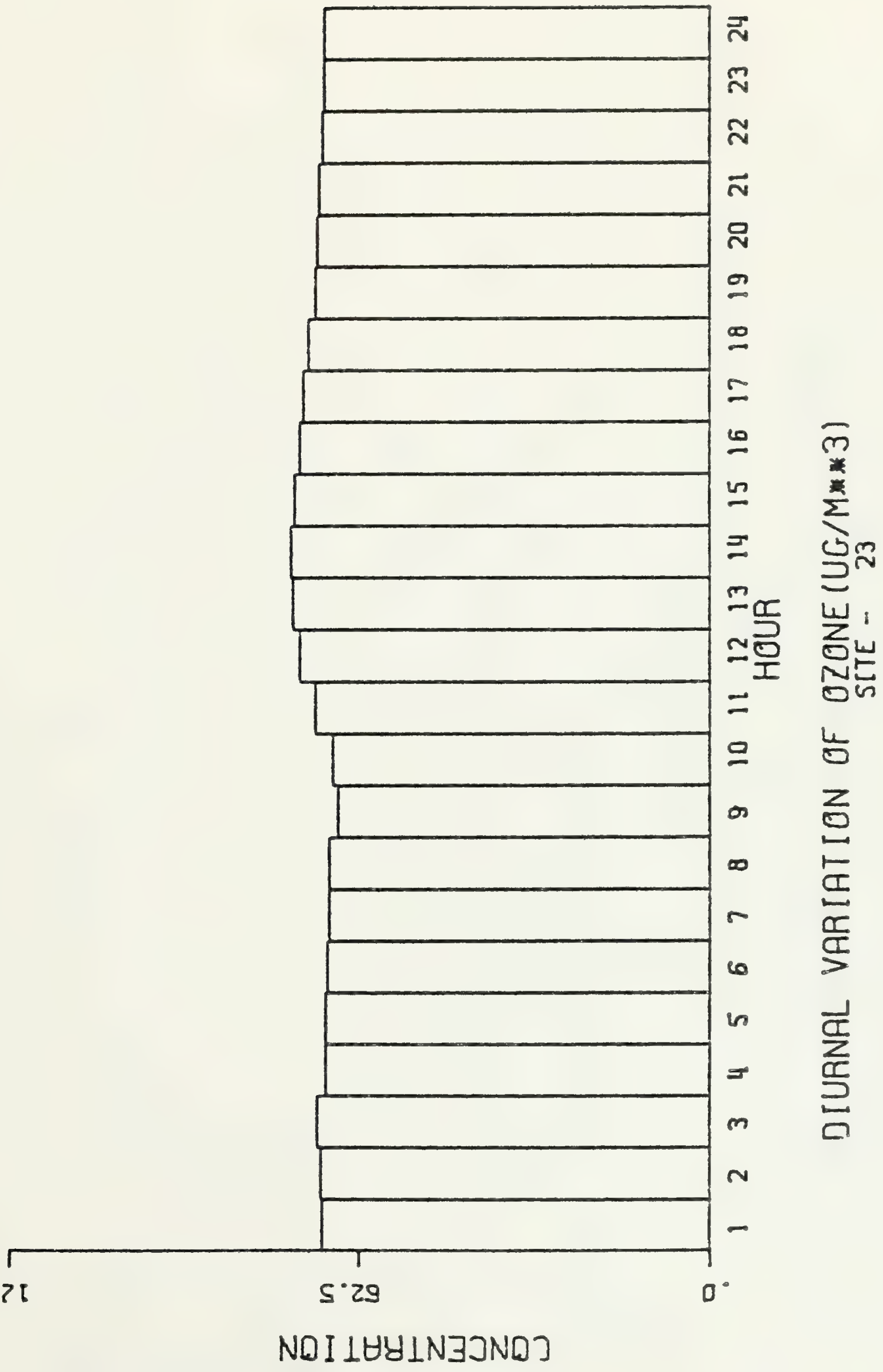
DIURNAL VARIATION OF METHANE (UG/M**3 X 10**-1)
SITE - 23



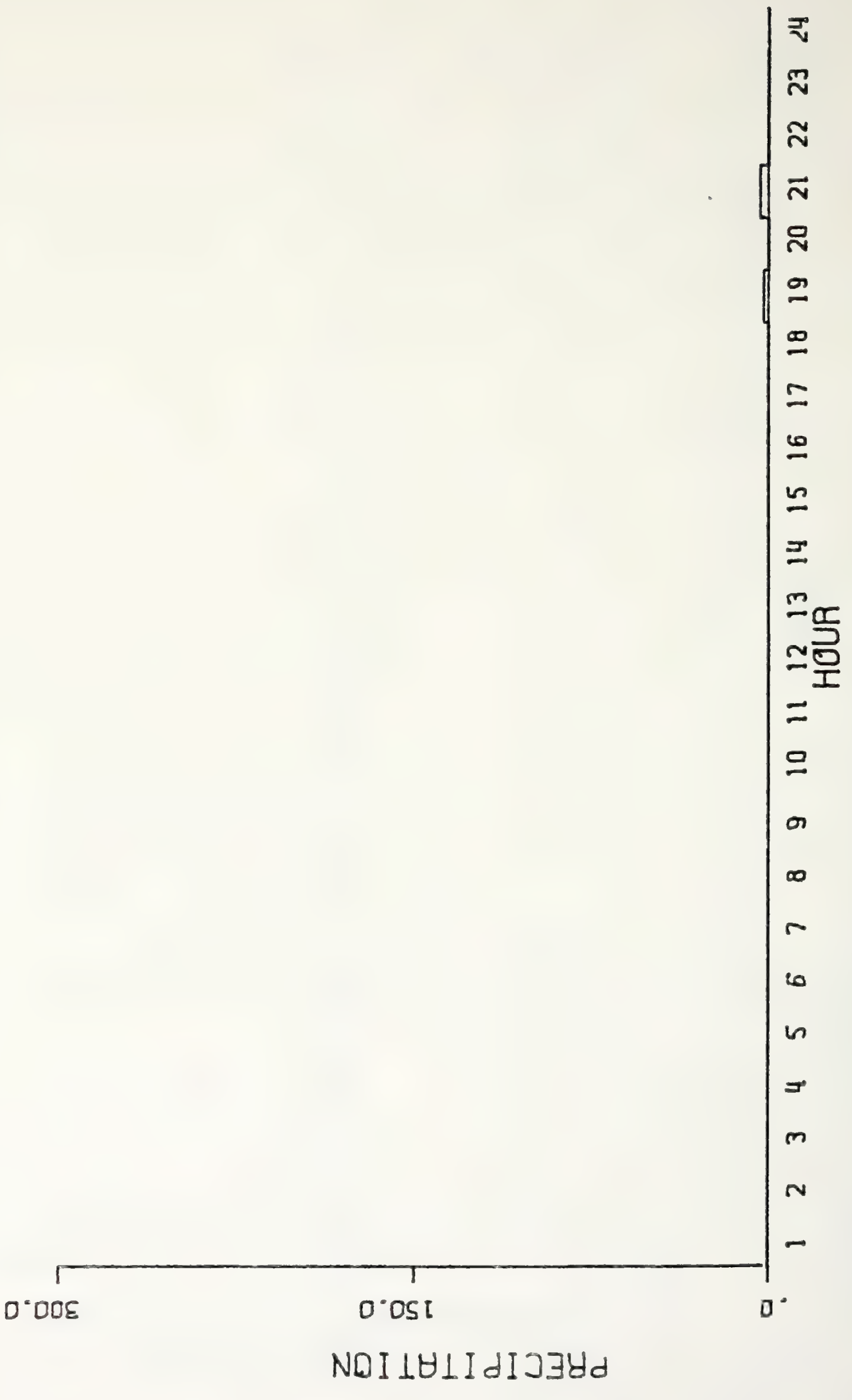
DIURNAL VARIATION OF NON-METHANE HYDROCARBONS (UG/M**3 X 10** -1)
SITE - 23



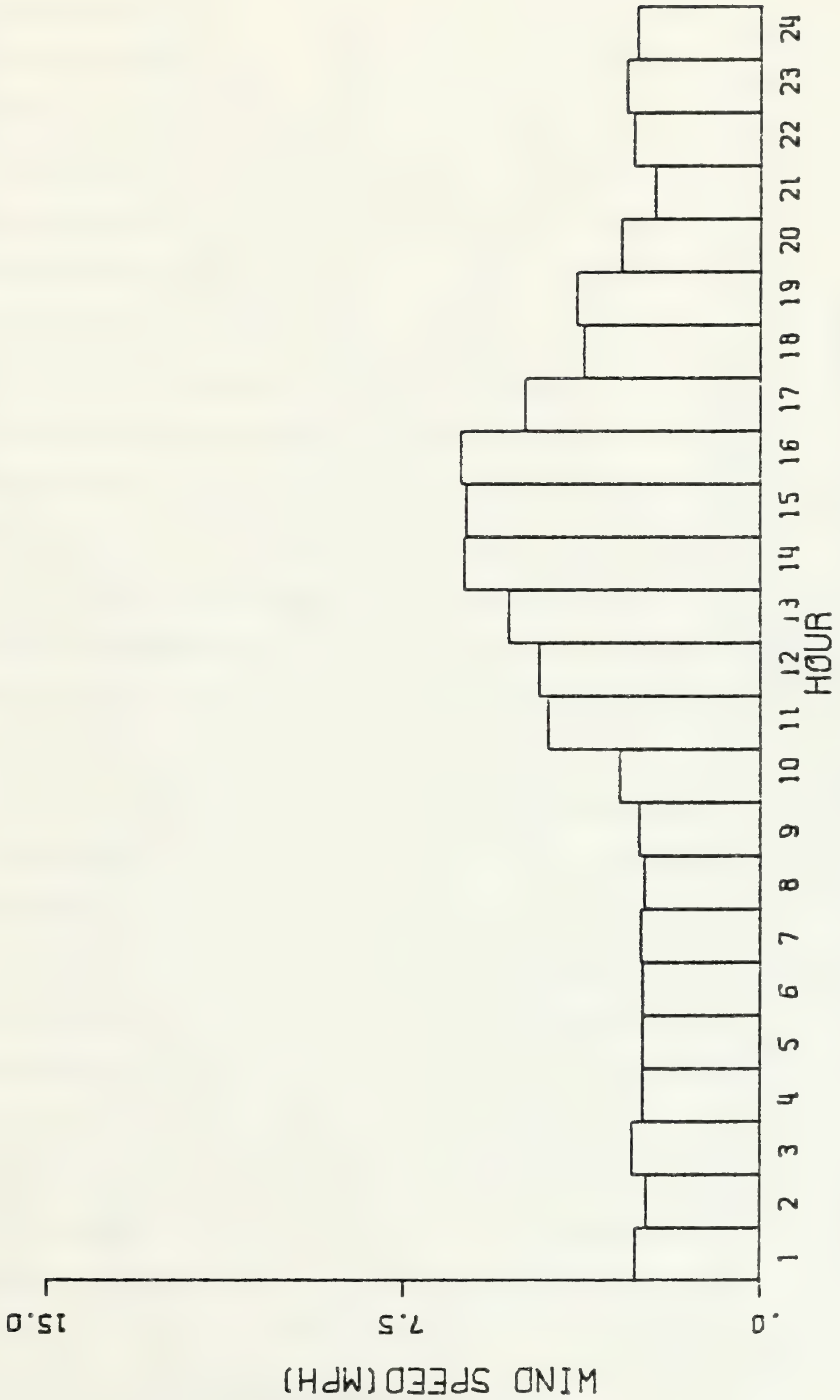
DIURNAL VARIATION OF CARBON MONOXIDE (UG/M**3 X 10**-1)
SITE - 23



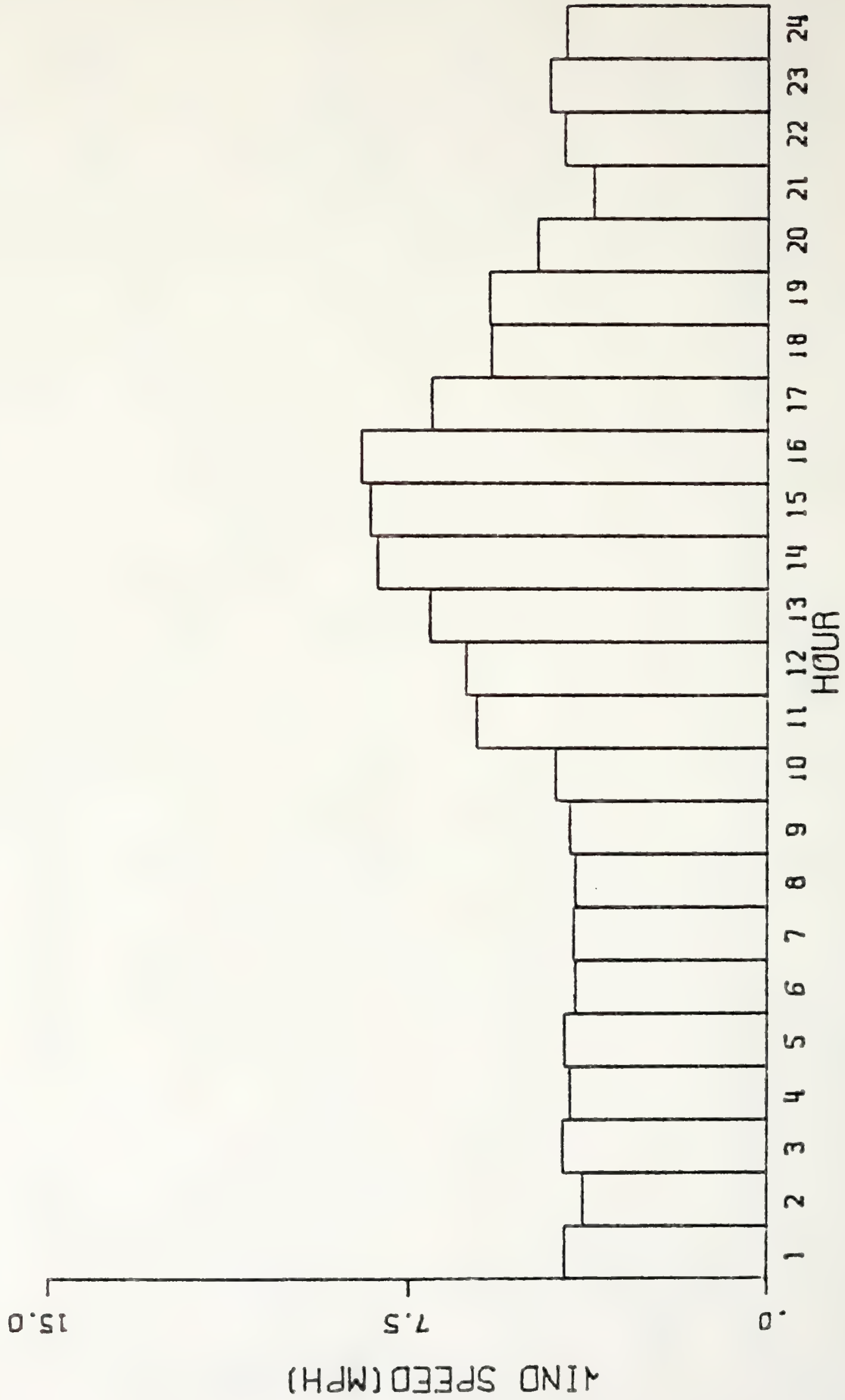
DIURNAL VARIATION OF OZONE (UG/M**3)
SITE - 23



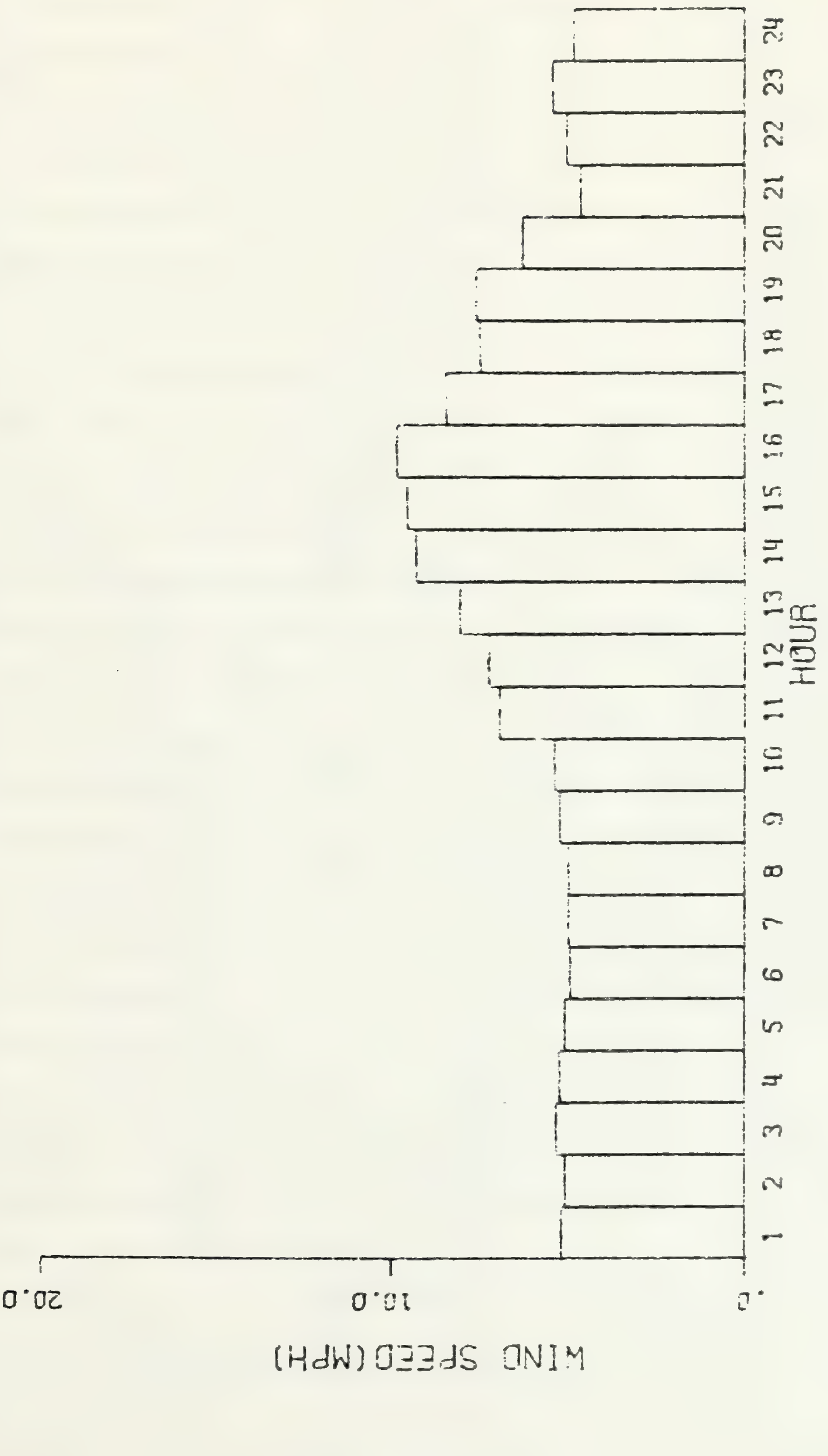
HOURLY TOTAL PRECIPITATION (HUNDREDTHS OF INCHES)
SITE - 23



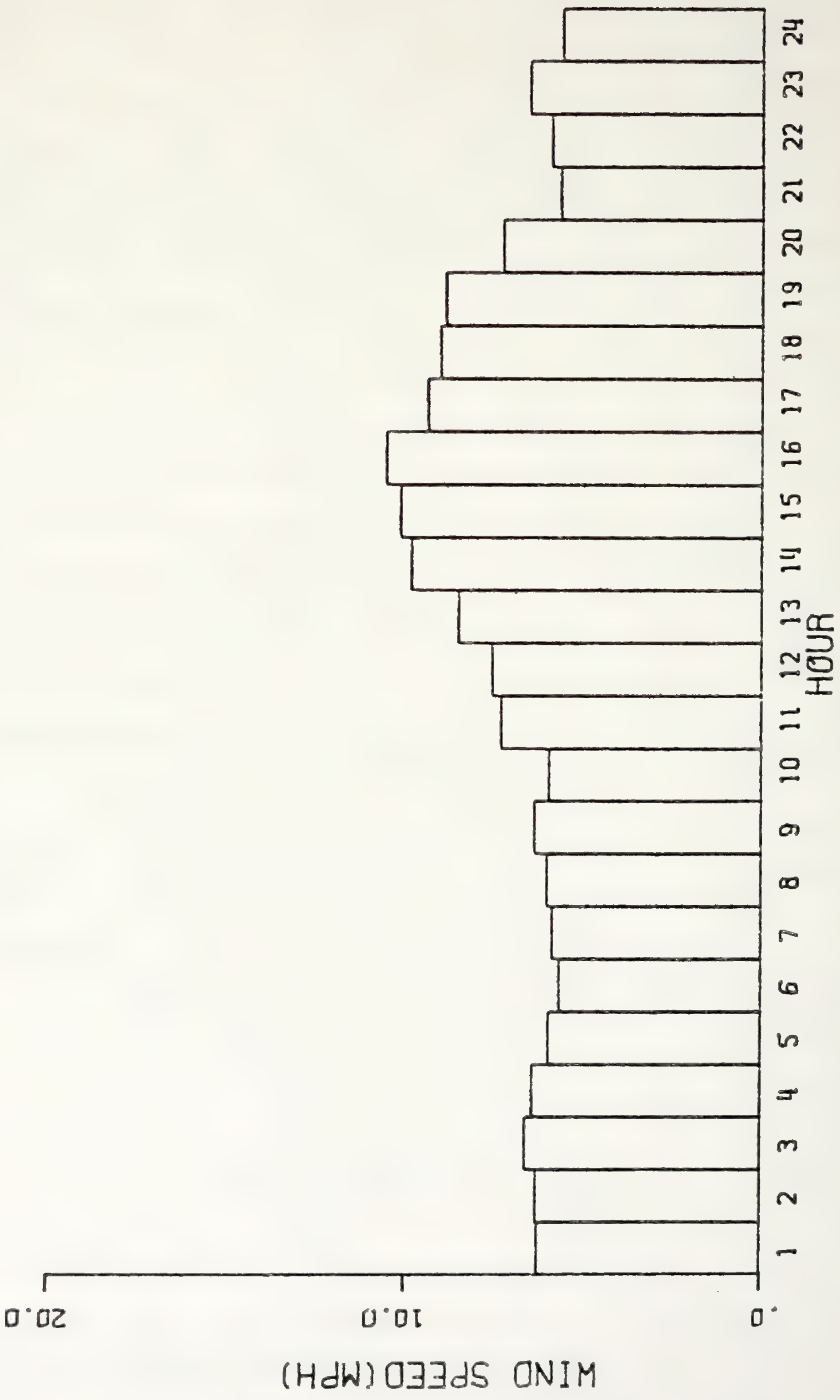
DIURNAL VARIATION OF WIND SPEED AT 8 FEET (MPH)
SITE - 23



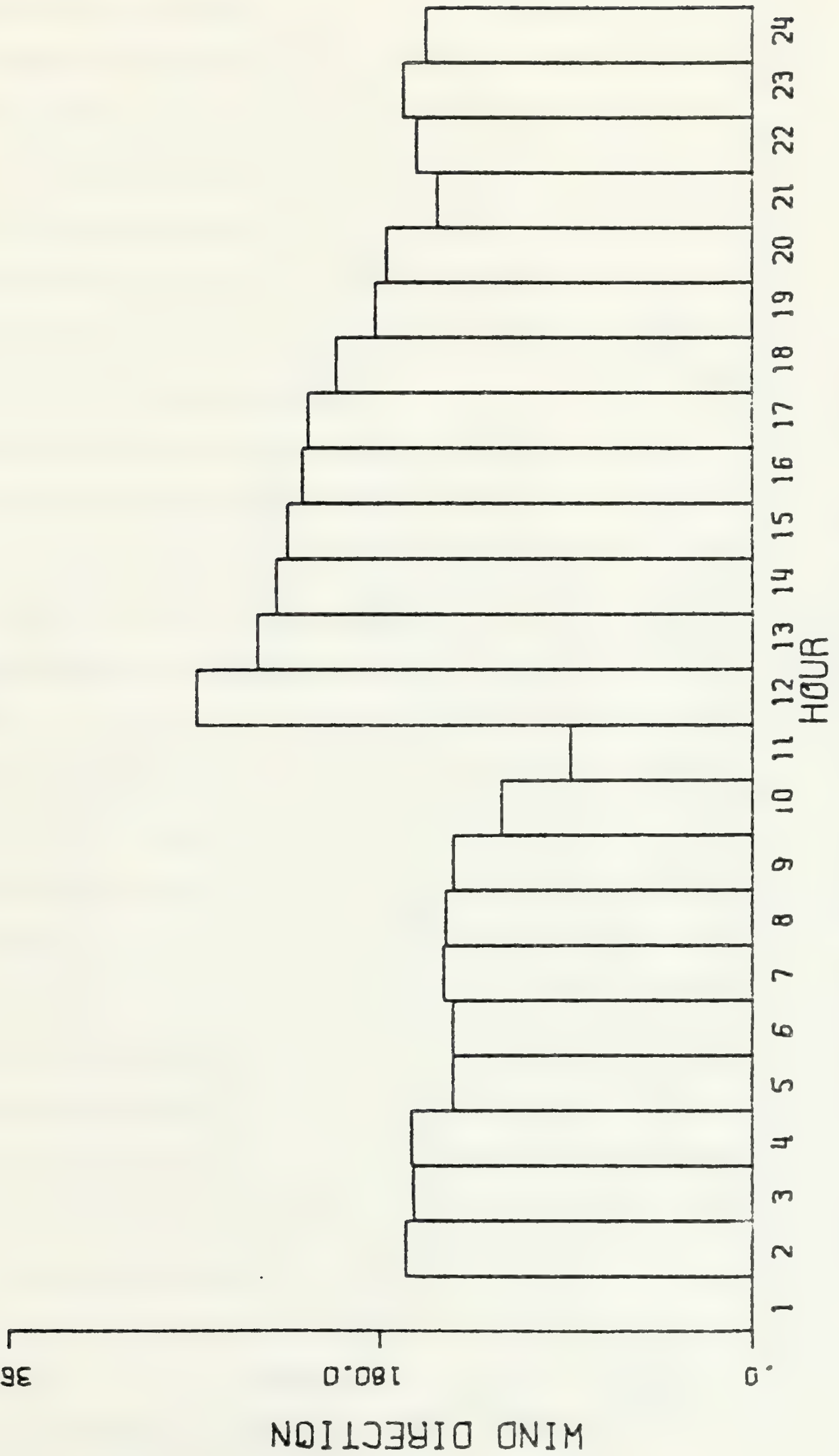
DIURNAL VARIATION OF WIND SPEED AT 30 FEET (MPH)
SITE - 23



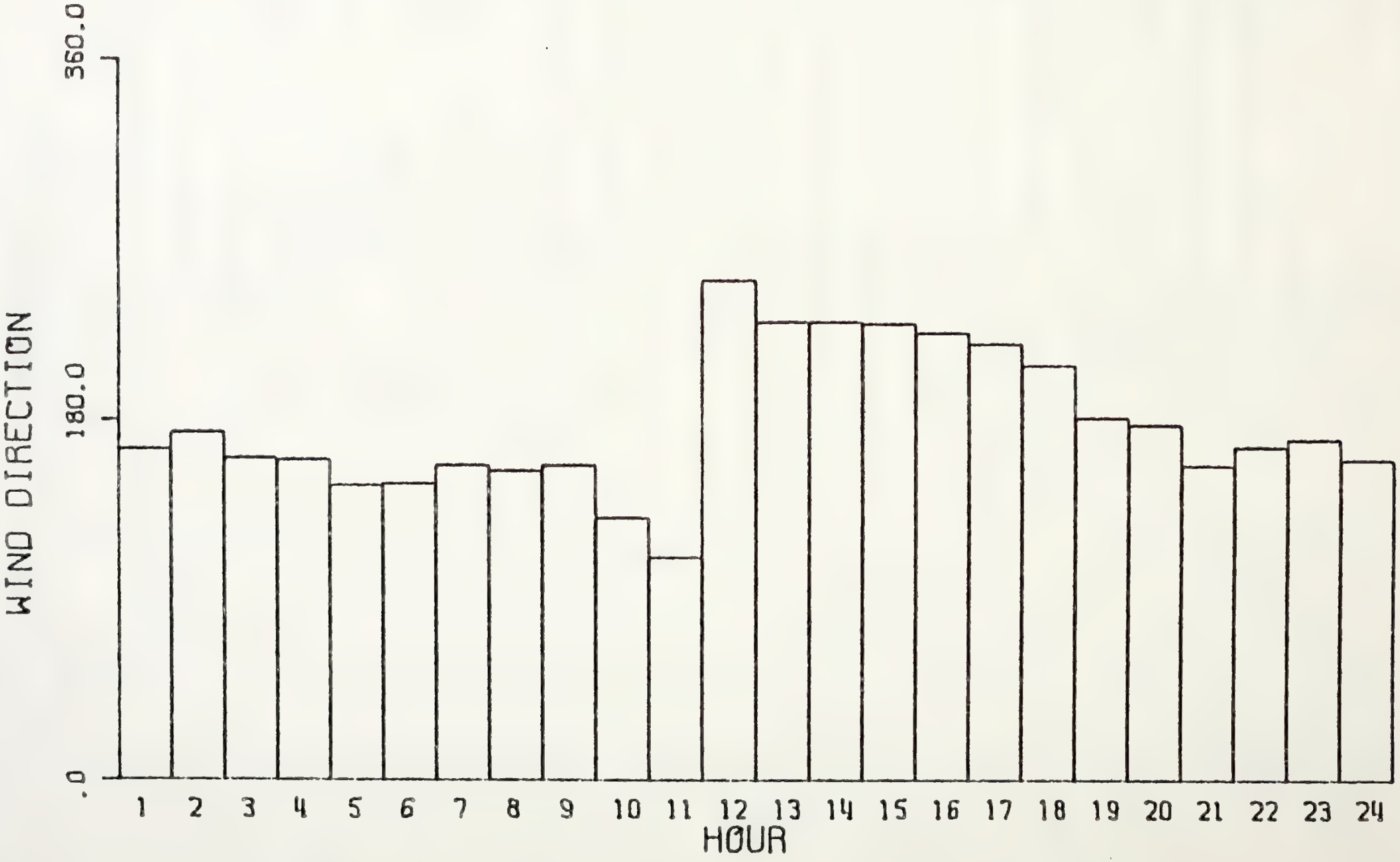
DIURNAL VARIATION OF WIND SPEED AT 100 FEET(MPH)
SITE - 23



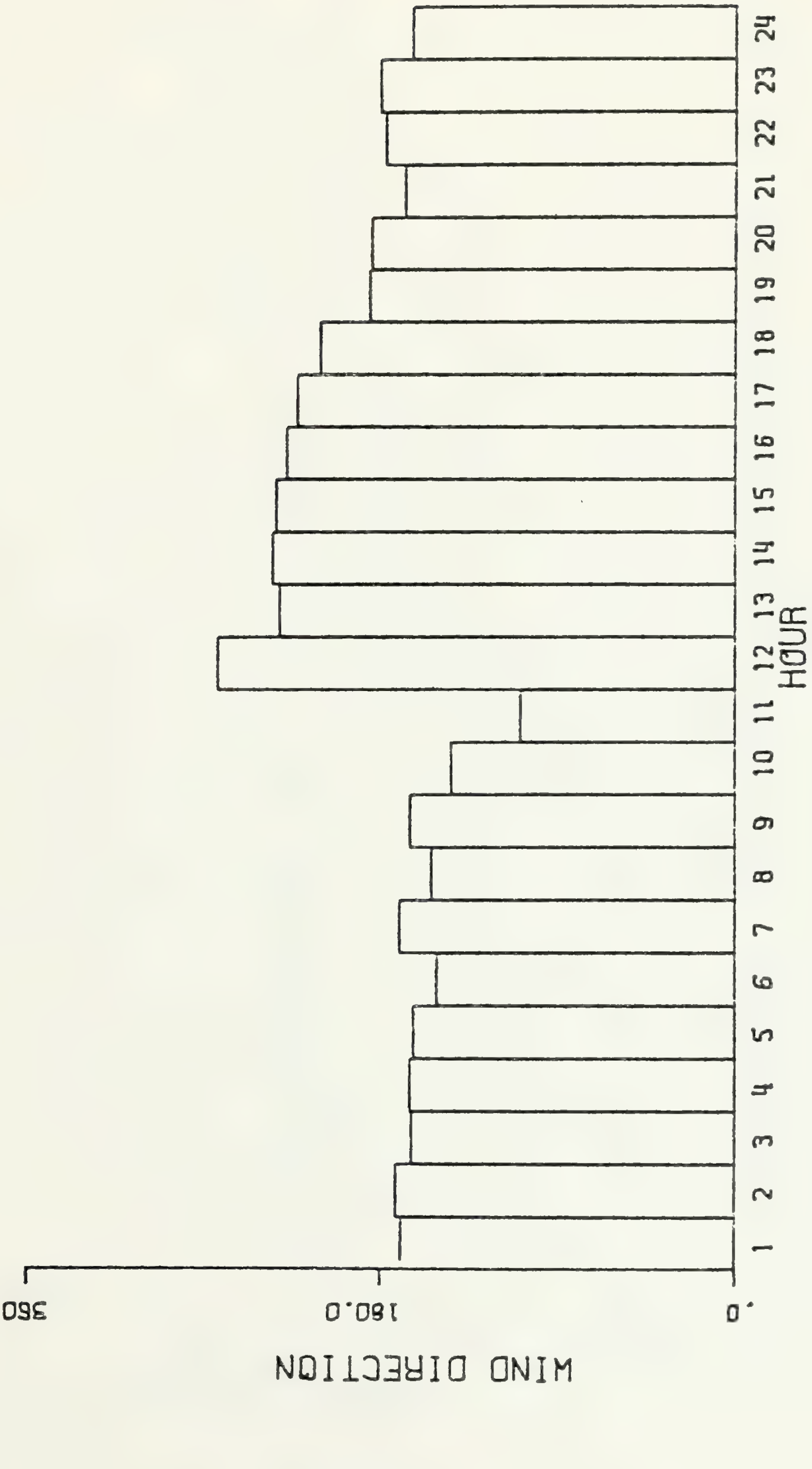
DIURNAL VARIATION OF WIND SPEED AT 200 FEET (MPH)
SITE - 23



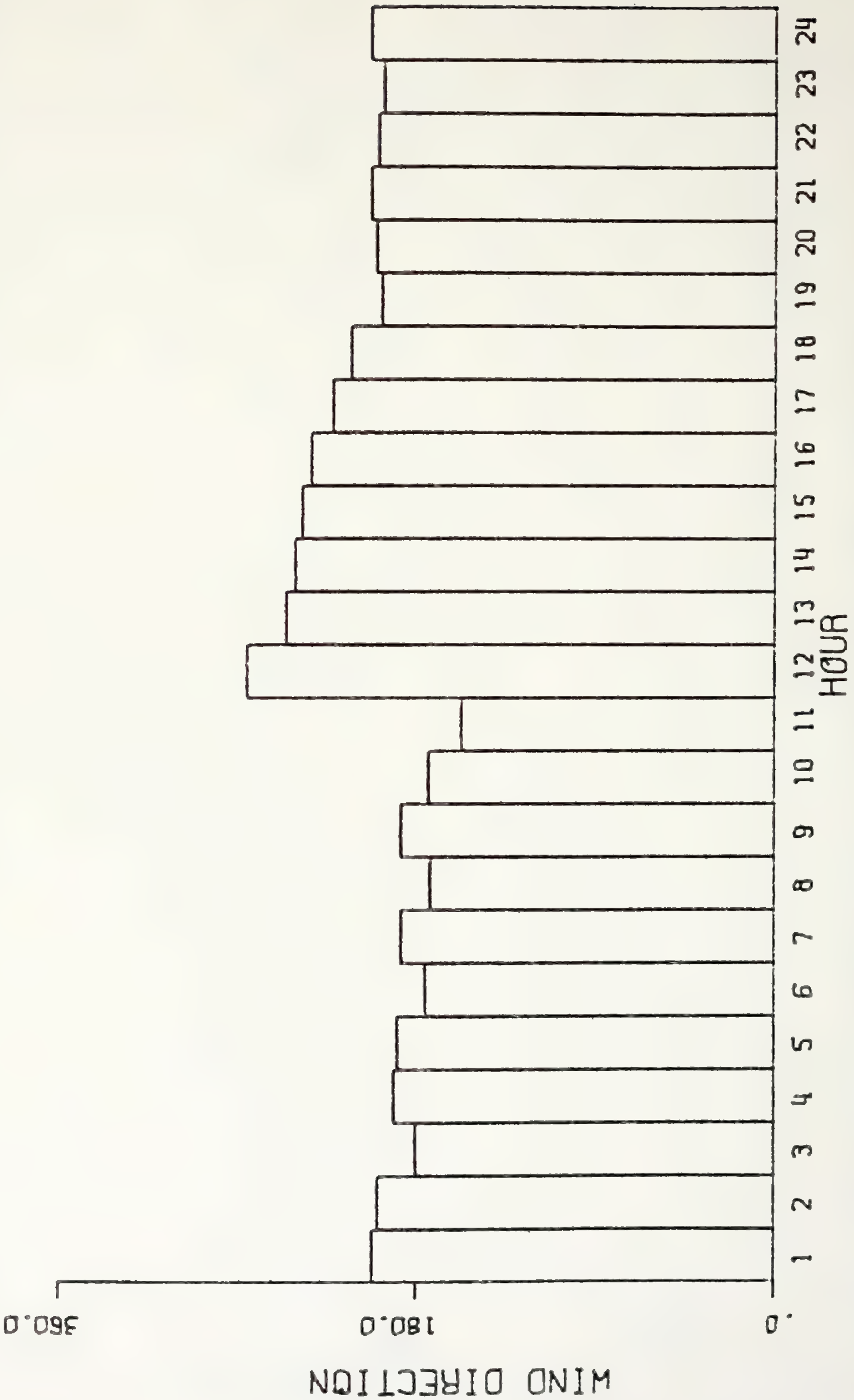
DIURNAL VARIATION OF WIND DIRECTION AT 8 FEET
SITE - 23



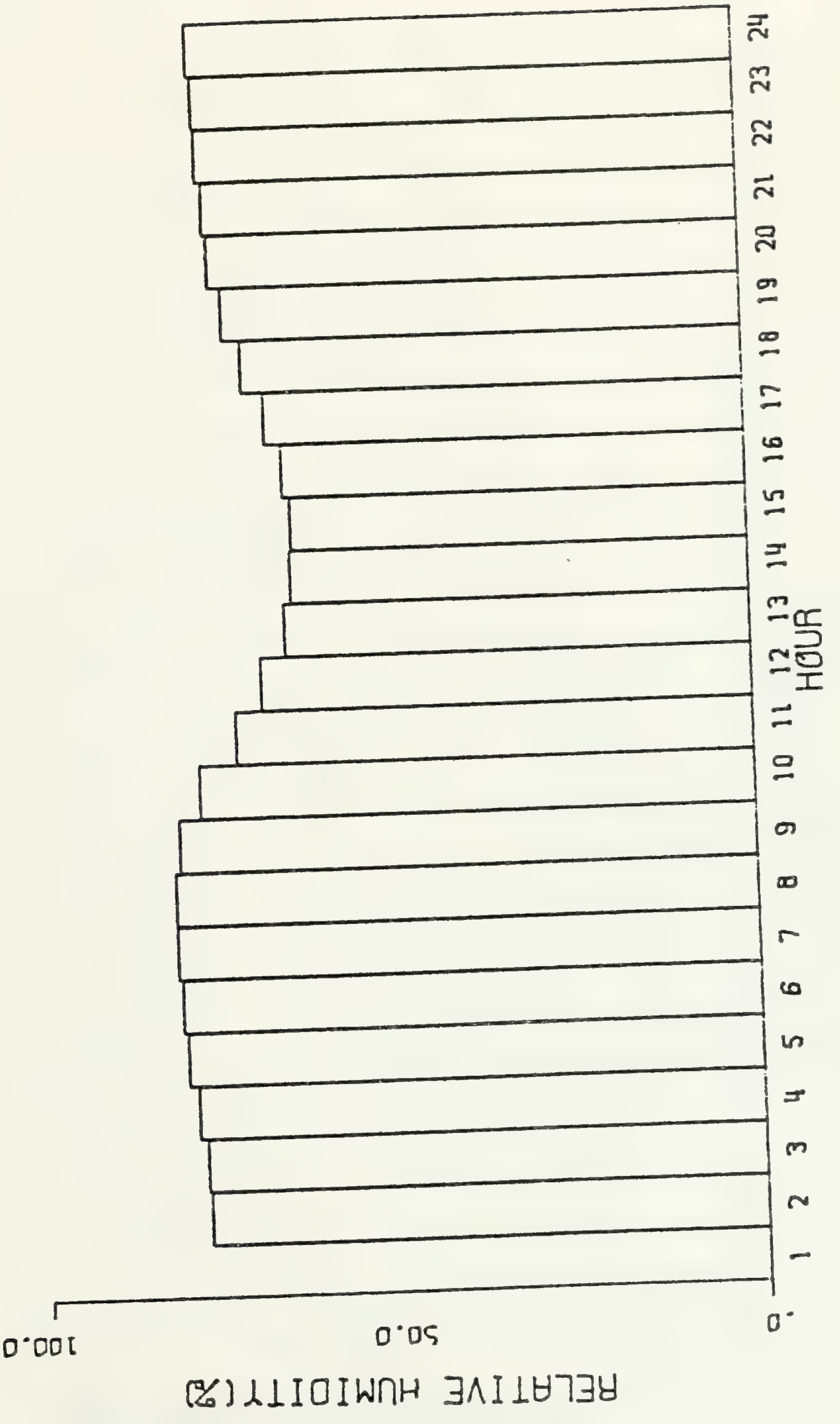
DIURNAL VARIATION OF WIND DIRECTION AT 30 FEET
SITE - 23



DIURNAL VARIATION OF WIND DIRECTION AT 100 FEET
SITE - 23

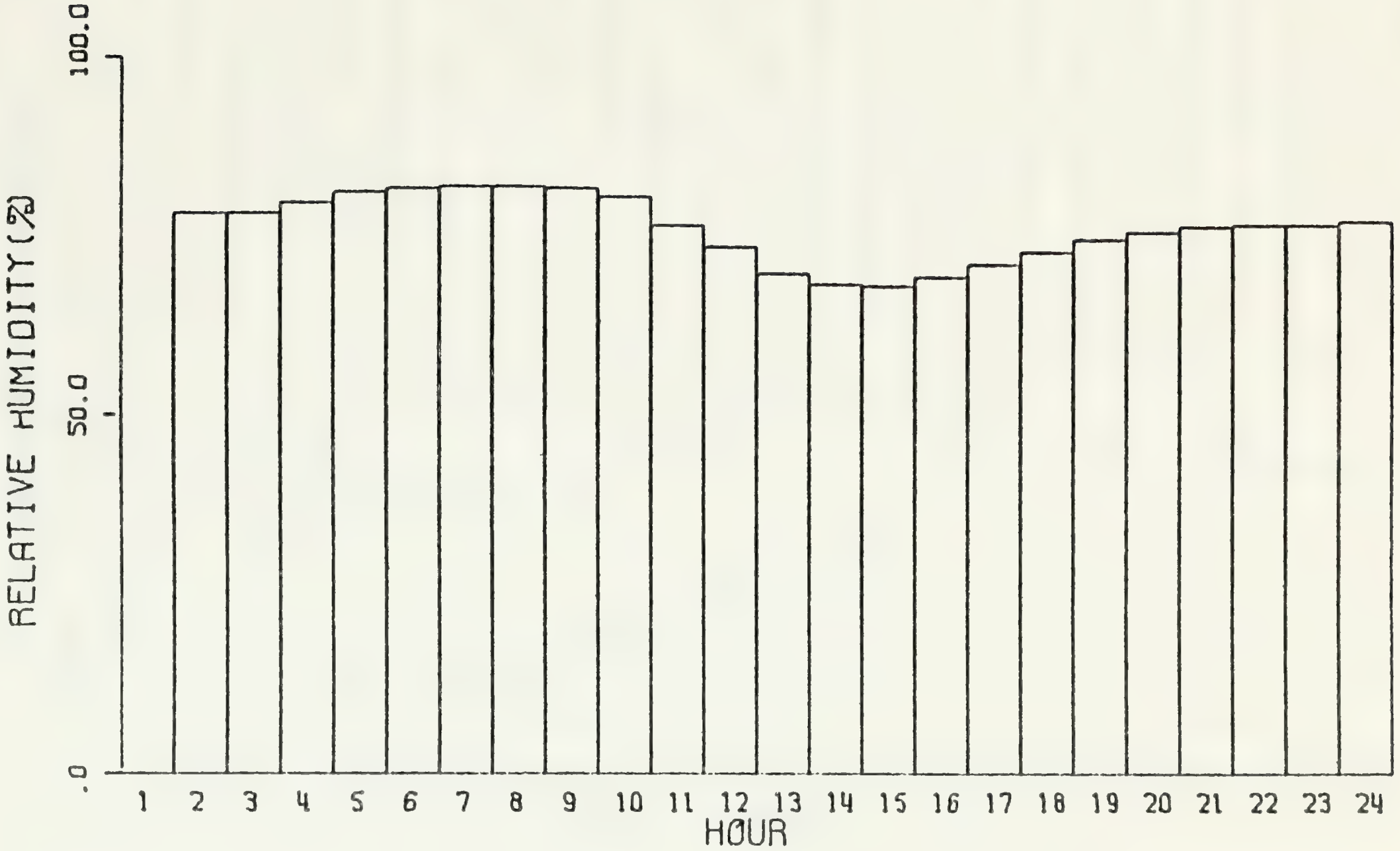


DIURNAL VARIATION OF WIND DIRECTION AT 200 FEET
SITE - 23

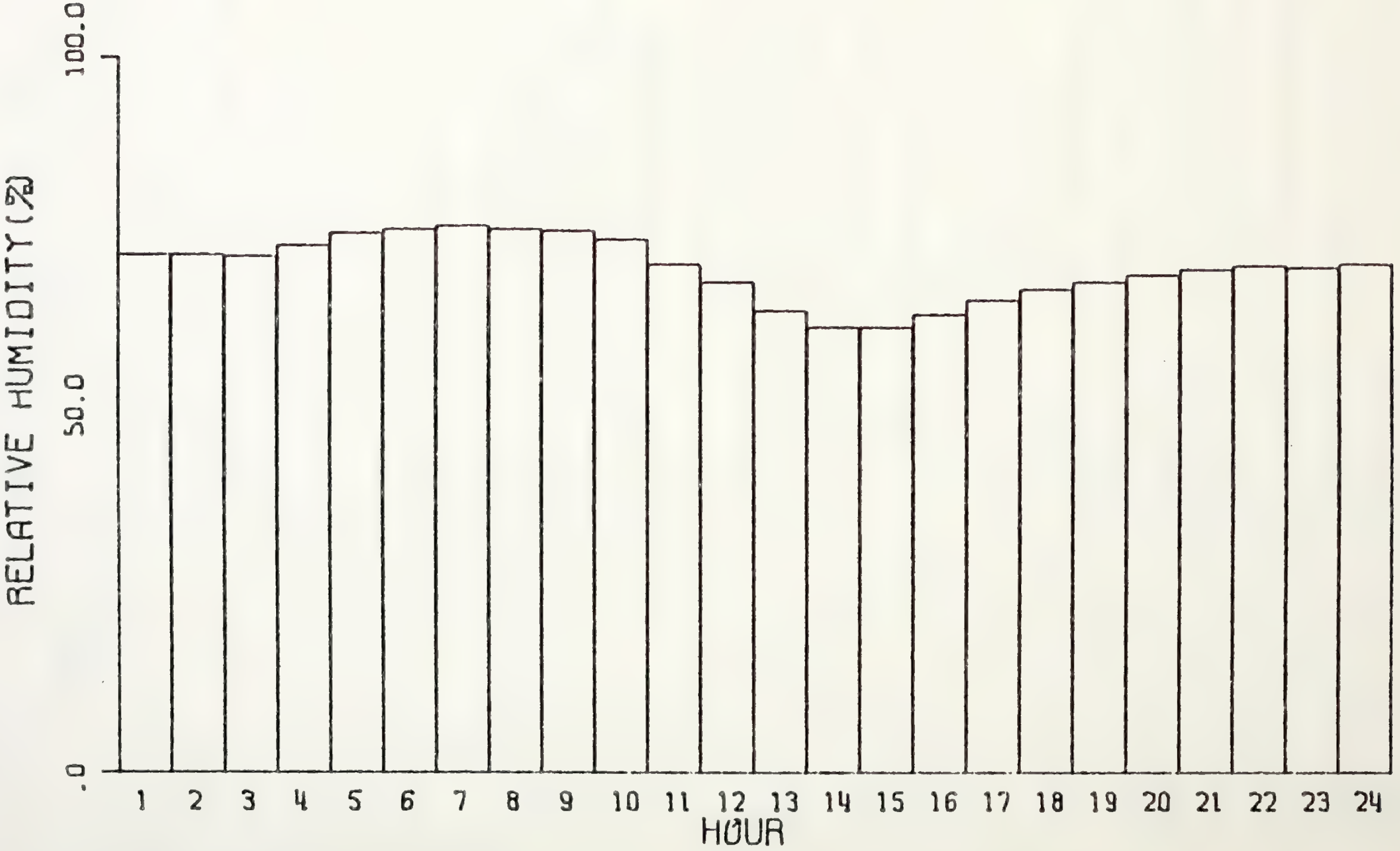


DIURNAL VARIATION OF RELATIVE HUMIDITY AT 8 FEET
SITE - 23

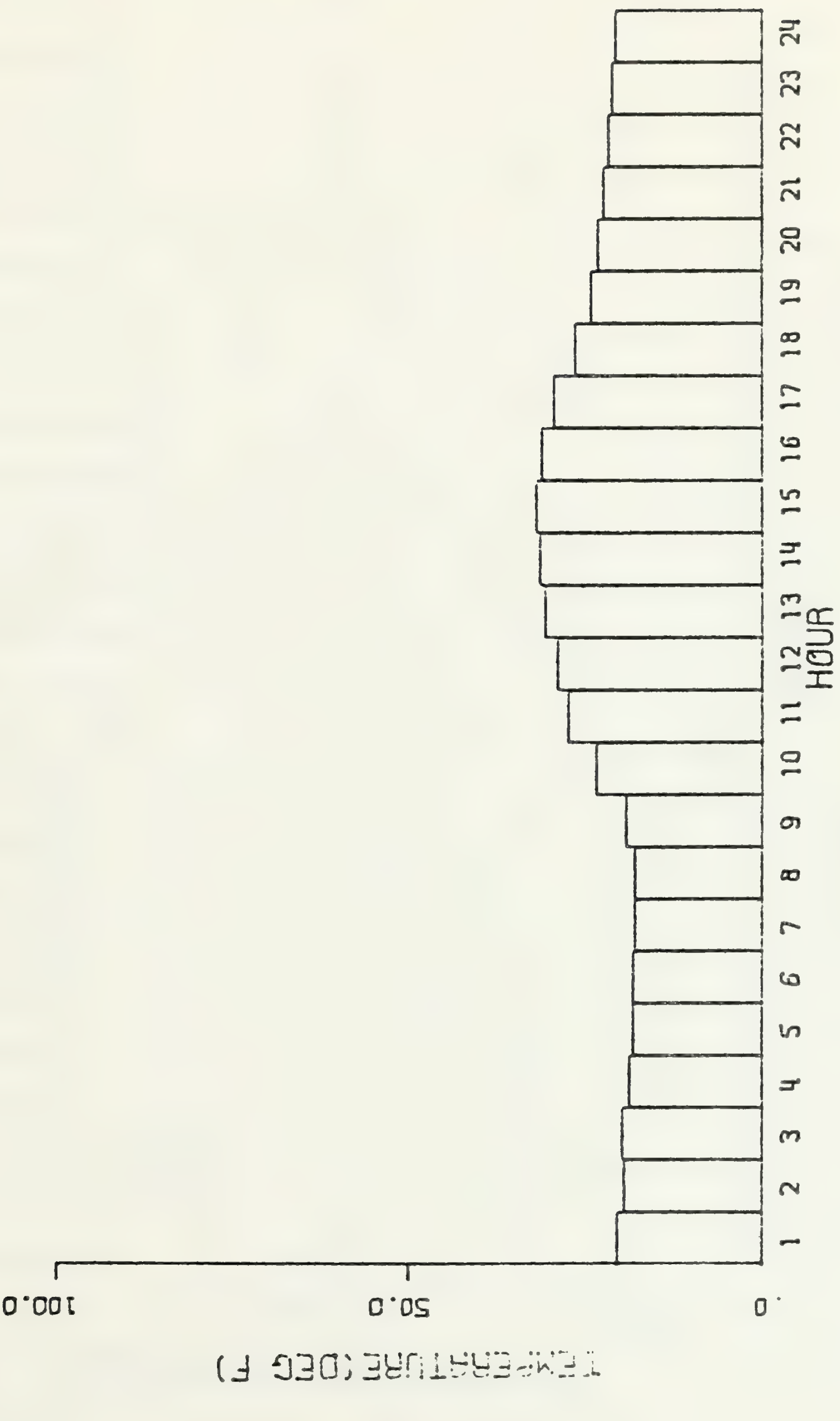
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 30 FEET
SITE - 23



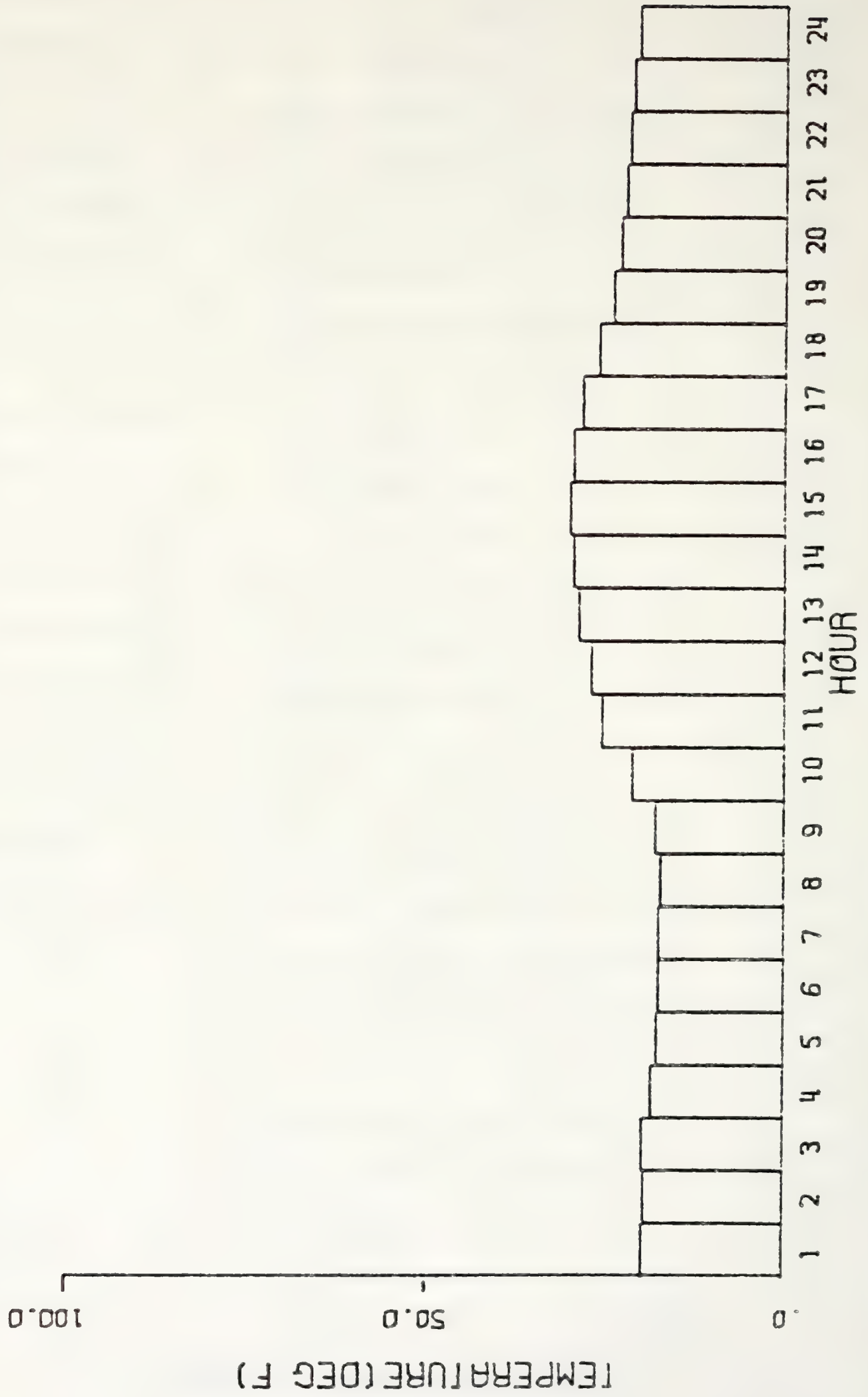
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 100 FEET
SITE - 23



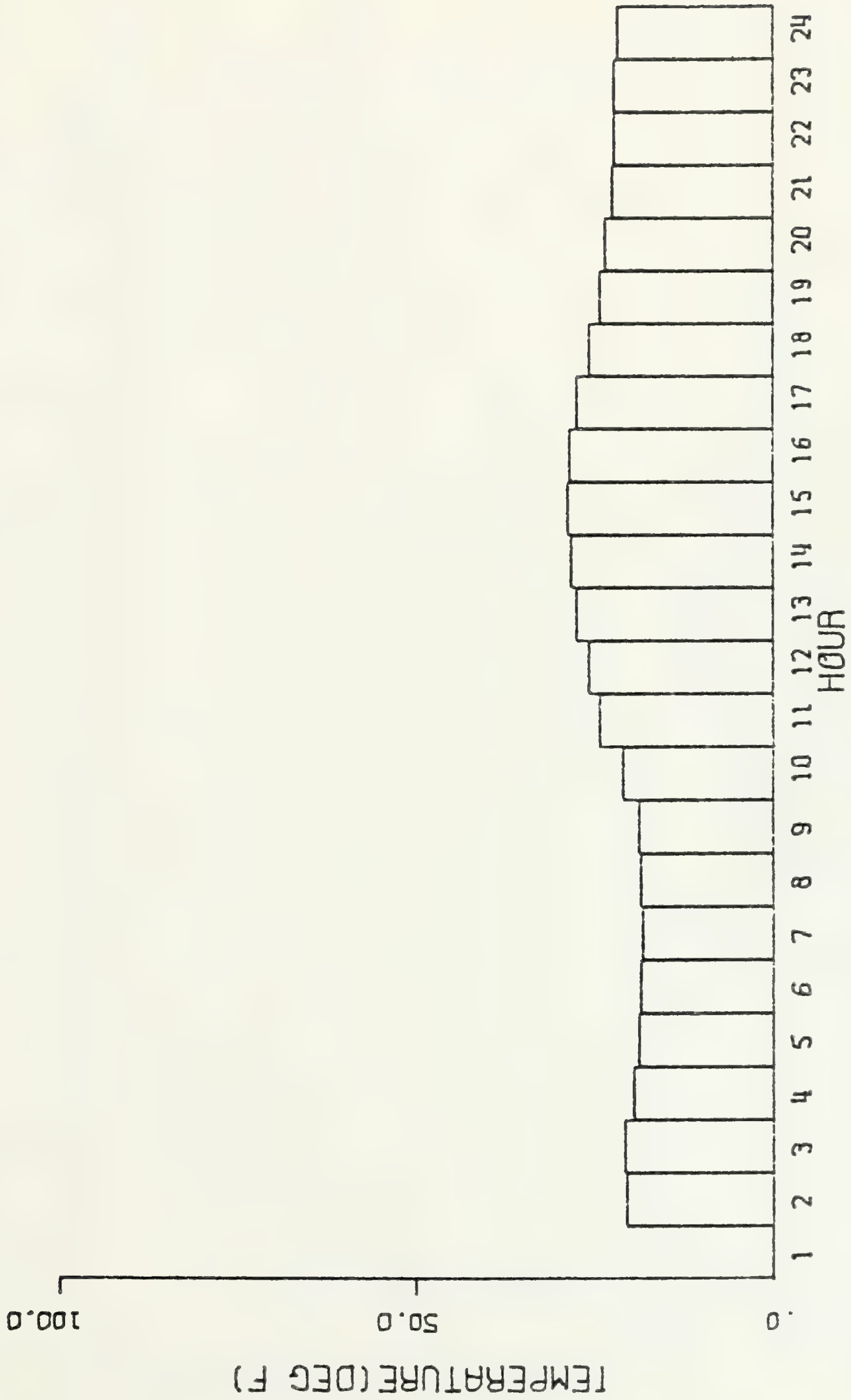
DIURNAL VARAITON OF RELATIVE HUMIDITY AT 200 FEET
SITE - 23



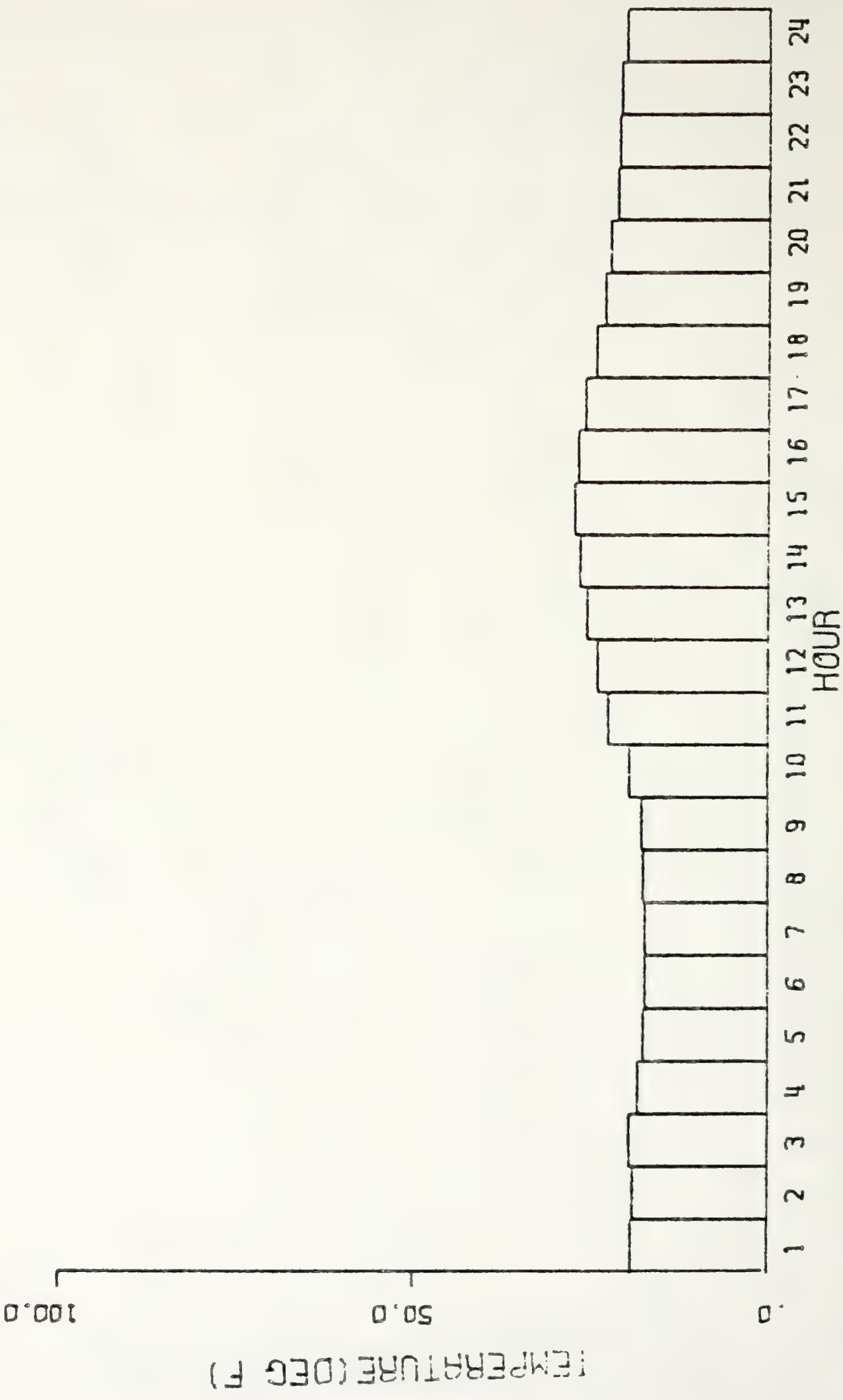
DIURNAL VARIATION OF TEMPERATURE AT 8 FEET (DEG F)
SITE - 23



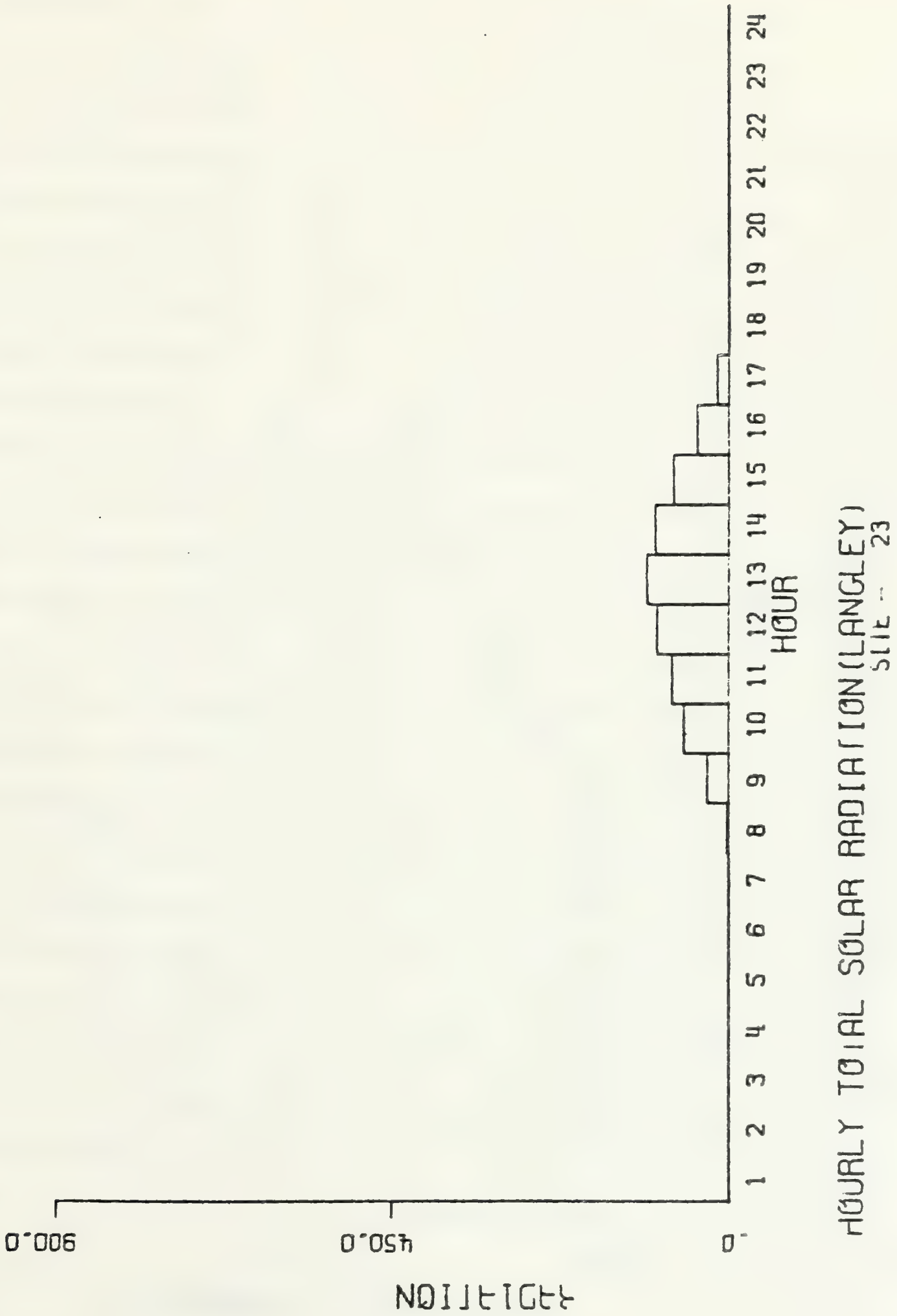
DIURNAL VARIATION OF TEMPERATURE AT 30 FEET (DEG F)
SITE - 23

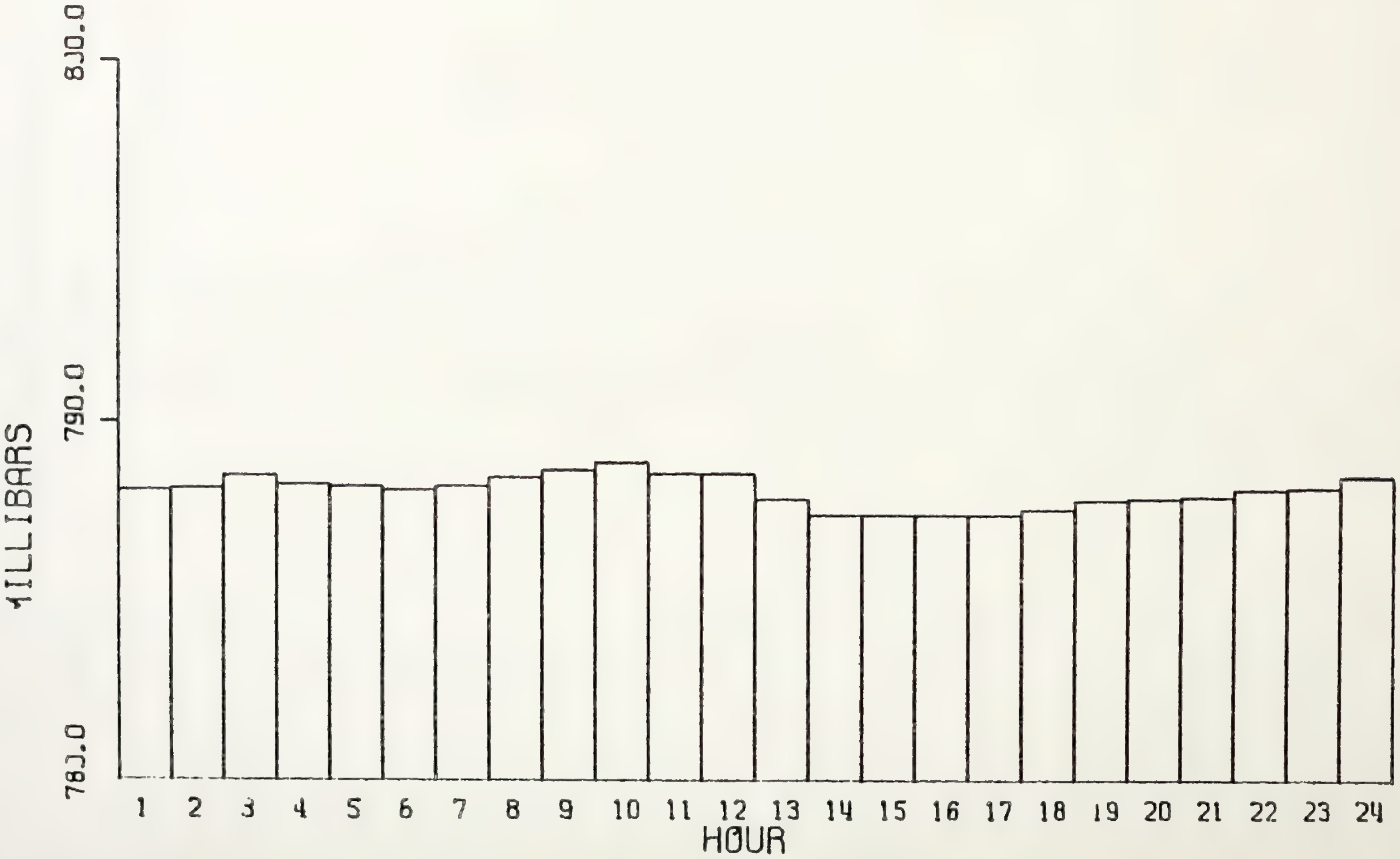


DIURNAL VARIATION OF TEMPERATURE AT 100 FEET (DEG F)
SITE - 23

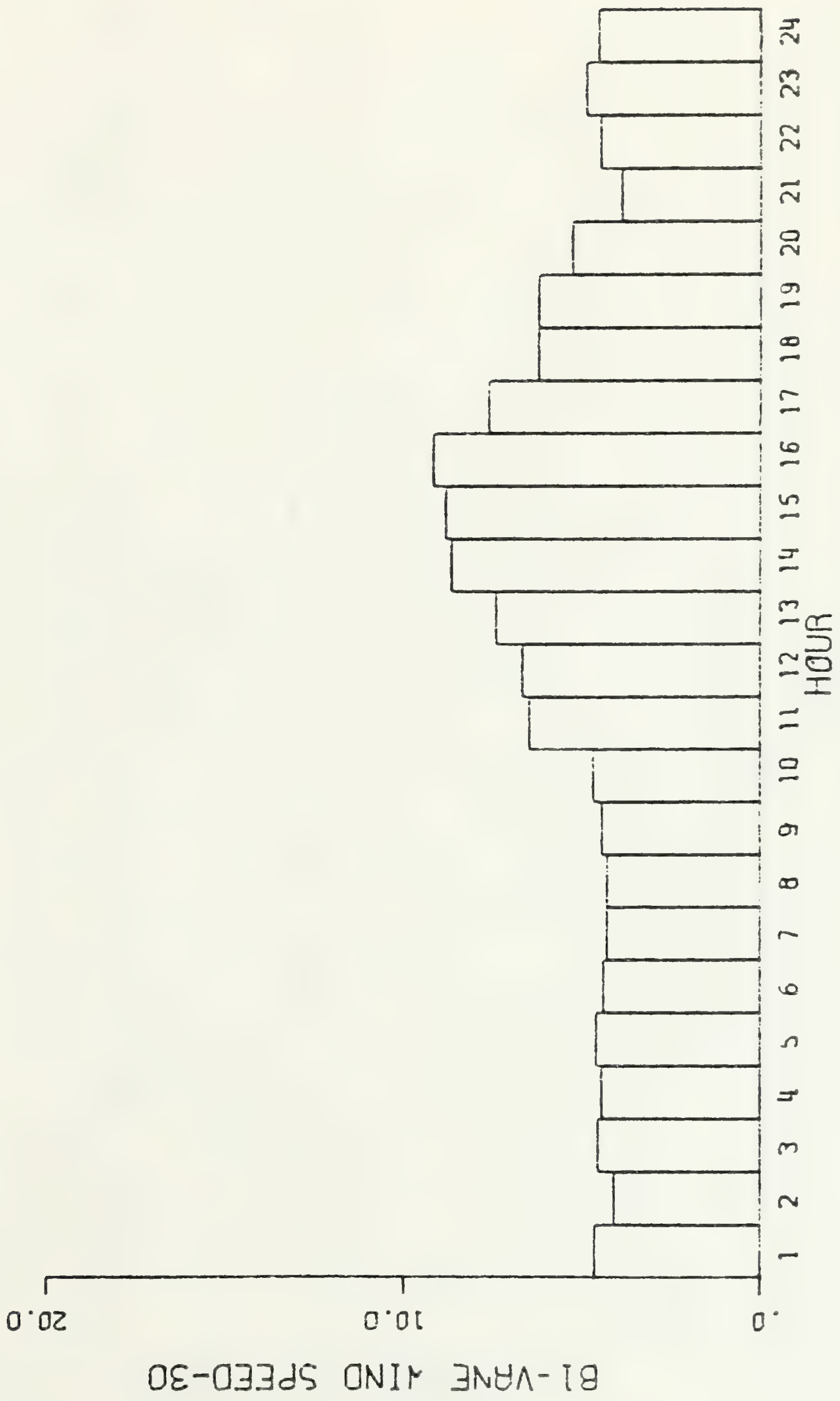


DIURNAL VARIATION OF TEMPERATURE AT 200 FEET(DEG F)
SITE - 23

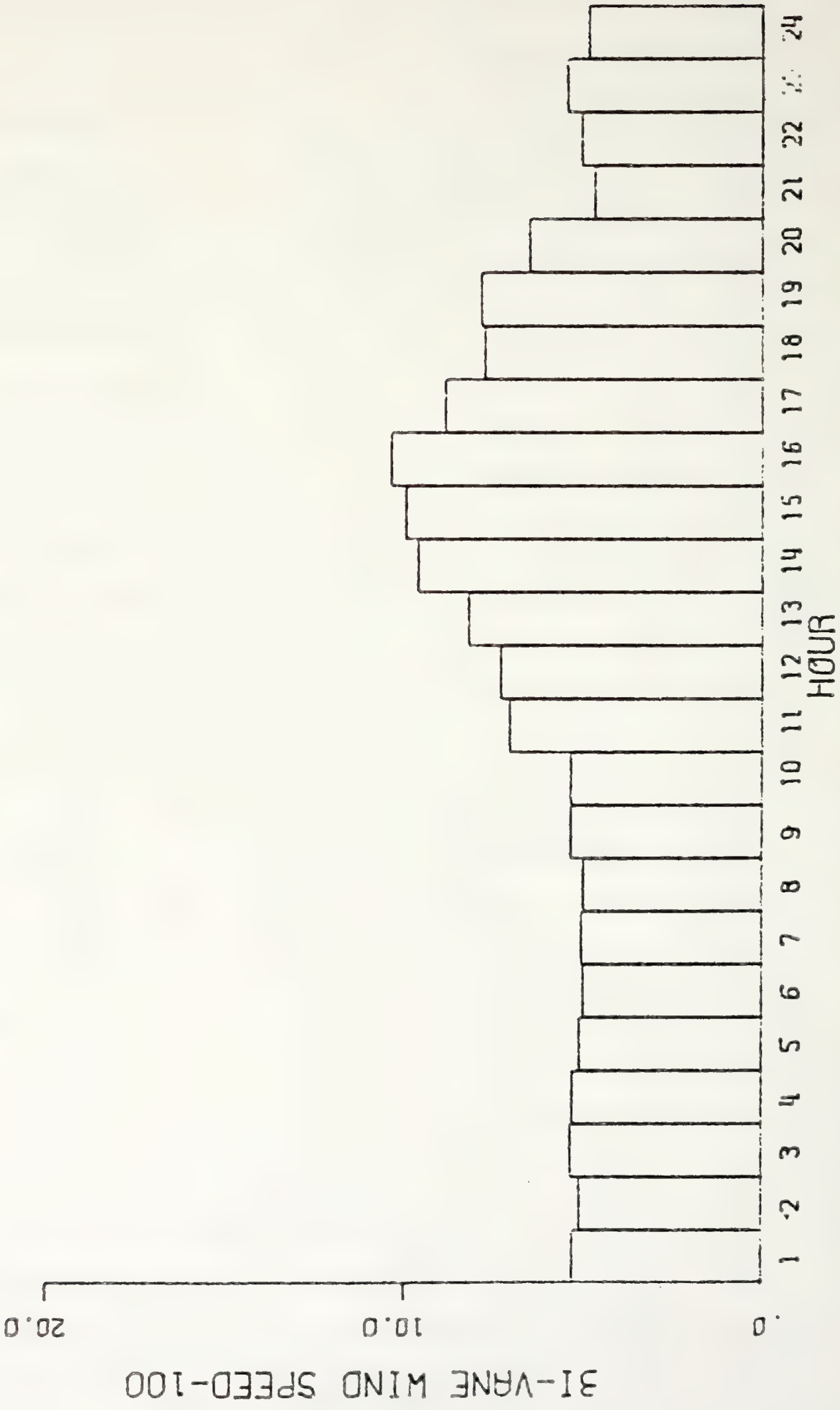

RADIATION
900.0
450.0
0.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
HOUR
HOURLY TOTAL SOLAR RADIATION(LANGLEY)
SITE - 23



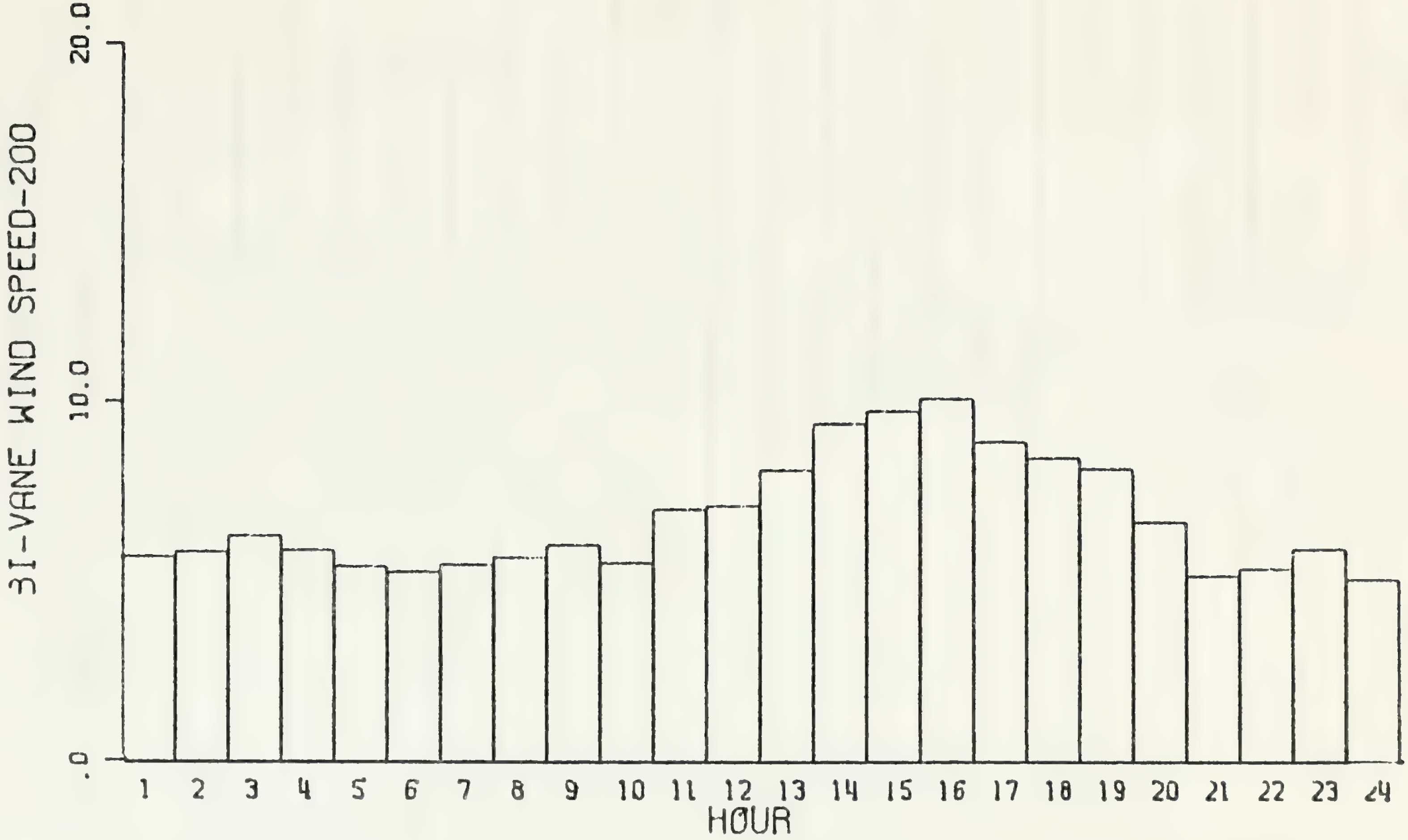
DIURNAL VARIATION OF BAROMETRIC PRESSURE
SITE - 23



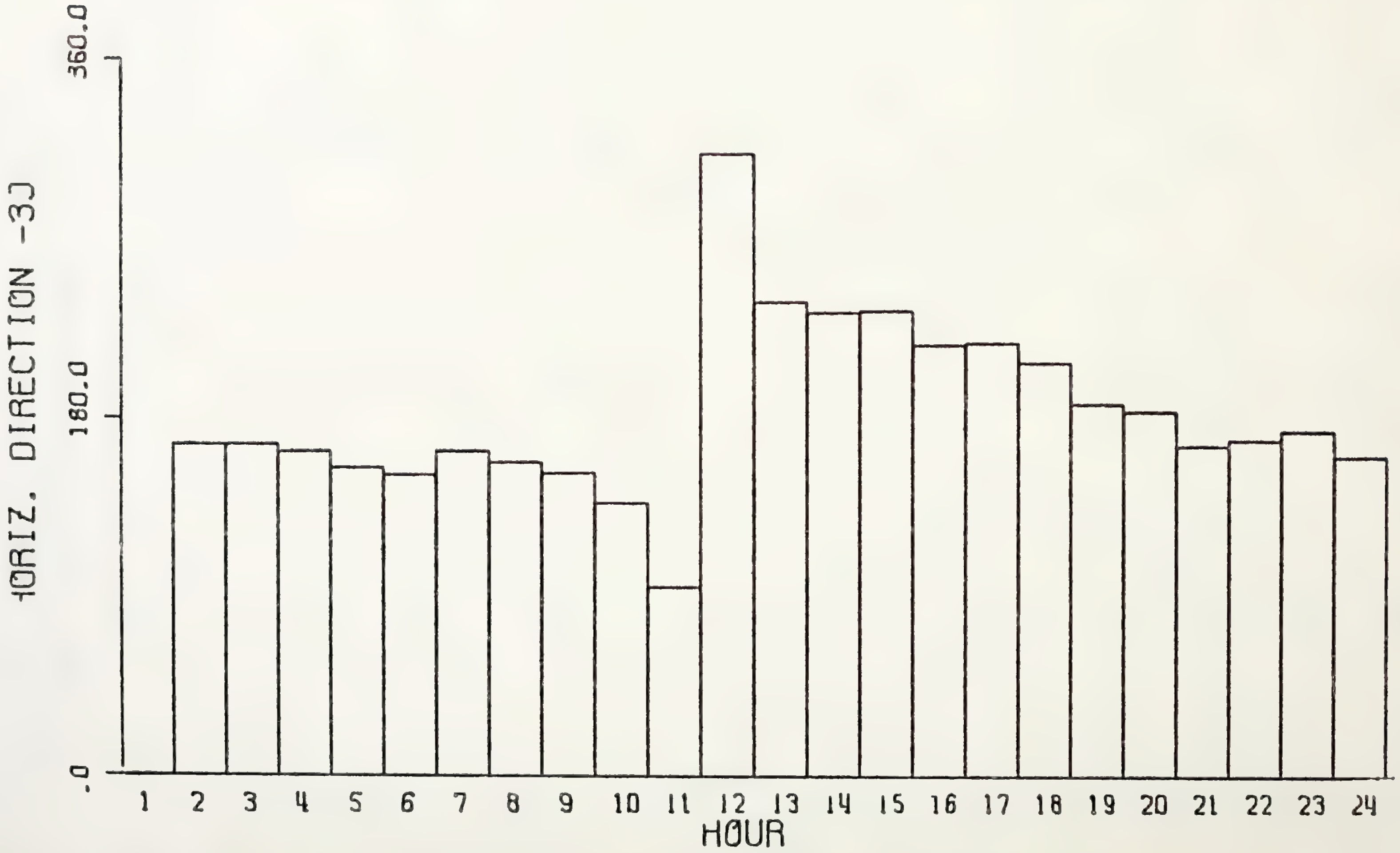
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 30 FEET
SITE - 23



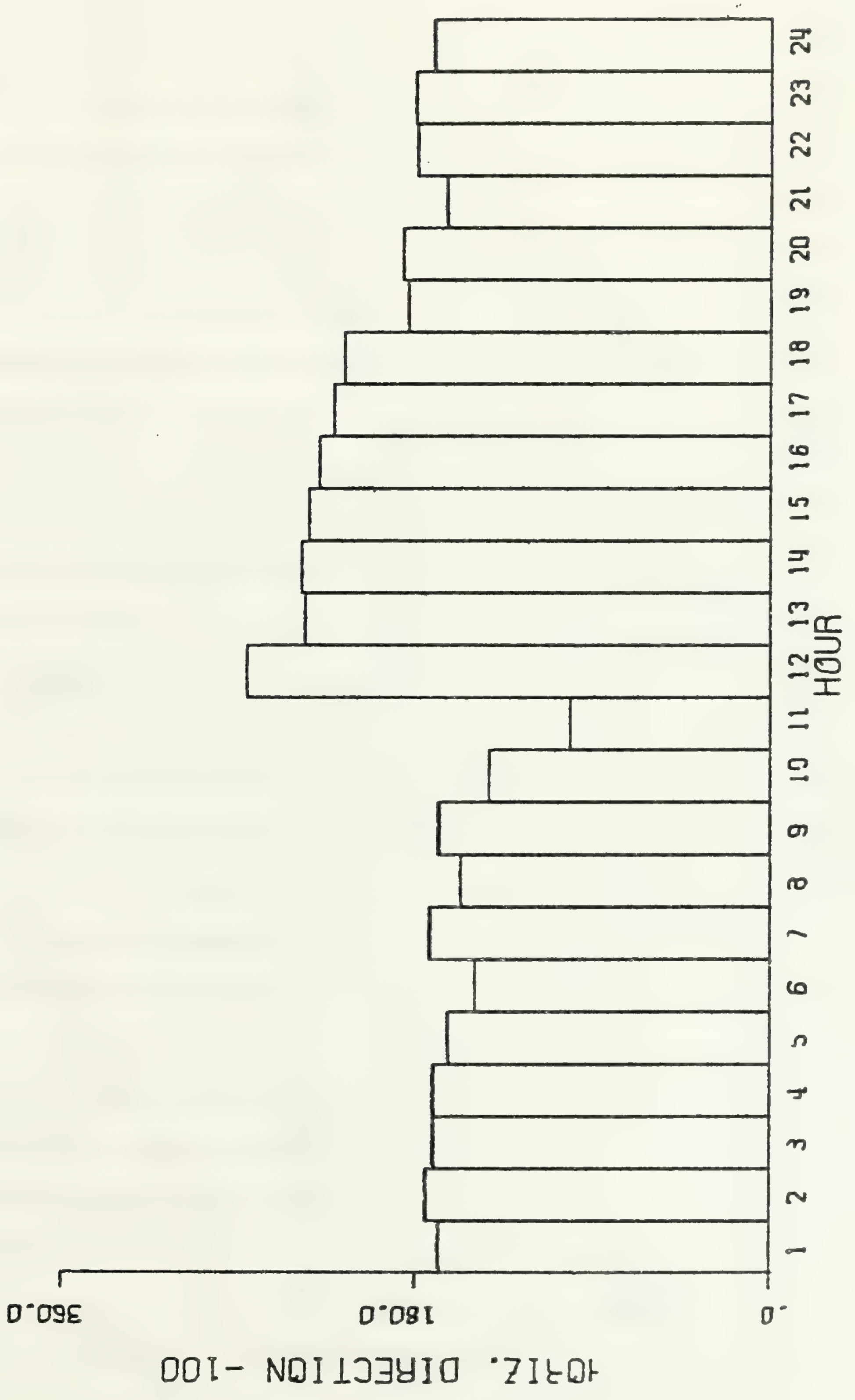
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 100 FEET
SITE - 23



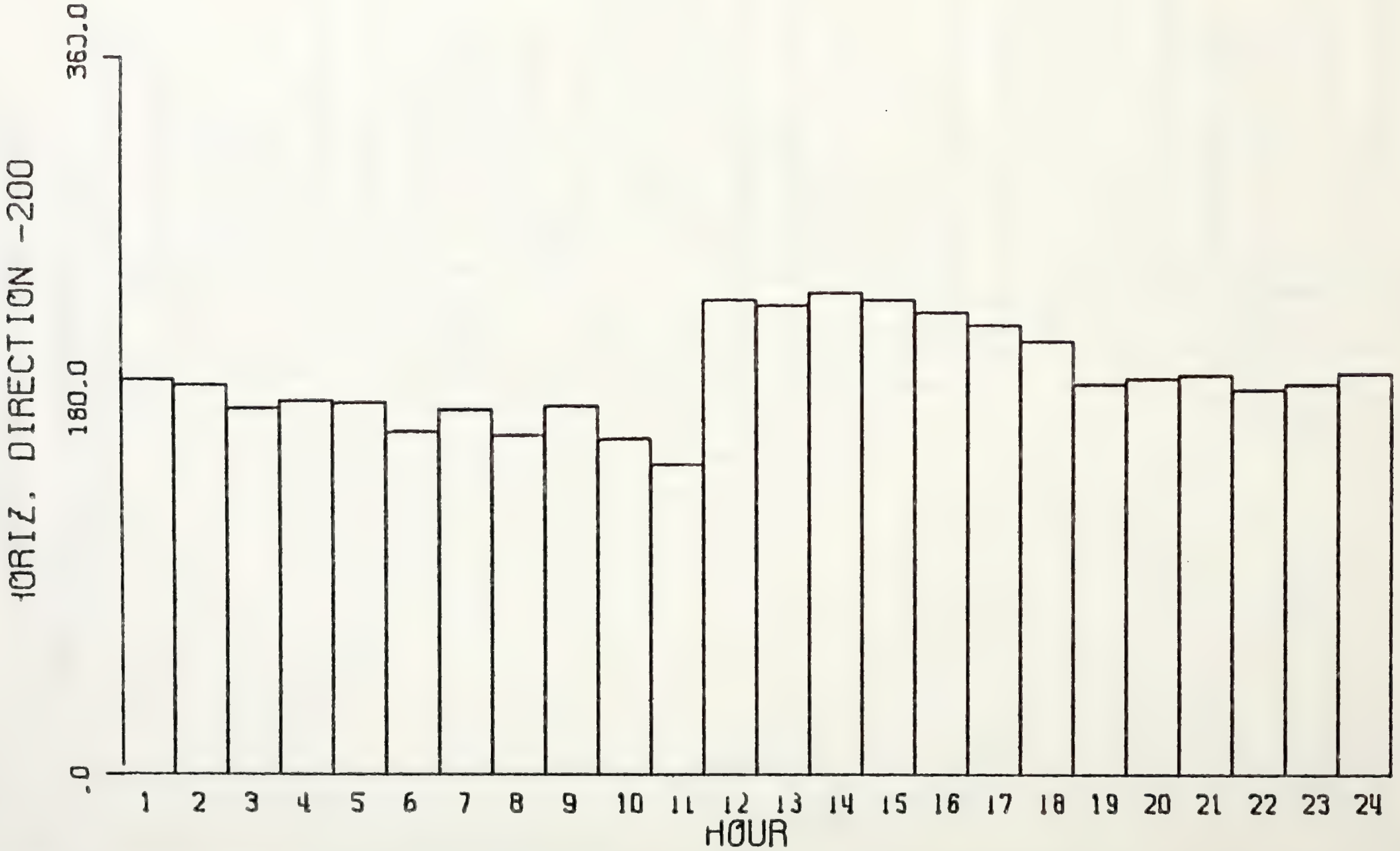
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 200 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 30 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 100 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 200 FEET
SITE - 23

CORPORATION

# C-B SHALE OIL PROJECT METEOROLOGICAL TOWER STIE
# STABILITY CLASS DETERMINATION USING PYRANOMETER RECORDING
PERIOD(1/ 1/77 TO 1/31/77)

```
                                              HOUR
         1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

1/ 1                                    C   C   D   D   D   D   D   D   D
1/ 2                                    D   D   D   D   D   D   D   D   D
1/ 3                                    D   D   D   D   D   D   D   D   D
1/ 4                                    C   C   D   C   C   C   D   D   D
1/ 5                                    C   C   C   C   C   C   C   D
1/ 6                                    C   C   C   C   C   C   D   D   D
1/ 7                                    D   C   D   D   D   D   D   D   D
1/ 8                                    C   C   C   C   C   D   D   D   D
1/ 9                                C   C   C       C   C   C   B   D   D
1/10                                    D   D   D   D   D   D   D   D   D
1/11                                    C   B   C   C   C   B   C   D   D
1/12                                    D   D   C   D   D   D   D   D   C
1/13                                    C   C   B   B   C   B   D   C   C
1/14                                C   C   C   C   D   B   C       D   D
1/15                                    D   D   D   D   C   C   C   C   D
1/16                                    C   C   D   C   C   D   D   C   C
1/17                                    C   C   C   B   B   B   C   C   C
1/18                                C   C   B       C   C   C   C   D   D
1/19                                C   C   B   B   B   B   C   C   C   C
1/20                                    C   C   B   C   B   C   C   D   D
1/21                                    C   C   B   C   C   C   D   D   D
1/22                                    C   C   C   C   C   C   C   C   C
1/23                                        C   C   C   C   C   D   D   C
1/24                                C   C   C   C   B   B   C   B   B   C
1/25                                C   C   C   B   A   B   C   C   C   D
1/26                                C   C   B   C   C   D   D   D   D   D
1/27                                C   C   B   C   C   C   C   C   C   D
1/28                                C   C   C   C   D   C   C   C   C   D
1/29                                C   C   B   C   B   B   C   C   C   D
1/30                                C   C   C   B   B   B   B   B   C   C
1/31                                C   C   C   B   B   C   C   C   D   D
```

* NON-ZERO PYRANOMETER READING BUT STABILITY CLASS UNCERTAIN SINCE NIGHTTIME NET RADIATION INDEX IS REQUIRED

RADIAN
CORPORATION

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
PERIOD(1/ 1/77 TO 1/31/77)

HOUR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1/ 1	F	E	E	E	E	E	E	E	D	B	D	D	D	D	D	D	D	D	D	D	D	D	E	D
1/ 2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
1/ 3	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	D	C	D	D	D	D	E	D	D
1/ 4	D	E	E	F	F	F	E	F	E	C	B	B	B	B	B	C	D	D	E	E	D	E	F	E
1/ 5	E	F	E	F	F	F	D	E	E	D	D	D	A	A	A	D	D	D	D	D	E	E	E	E
1/ 6	F	F	F	F	F	F	F	F	F	E	E	A	A	B	B	B	D	E	F	F	F	F	F	F
1/ 7	F	E	F	F	E	E	E	E	F	A	B	B	D	D	D	D	D	E	E	E	E	E	E	E
1/ 8	E	F	E	E	F	F	F	F	E	D	C	A	B	B	B	B	D	D	D	D	E	E	E	E
1/ 9	F	F		F	F	F	F	F	F	D		A	A	B	C	B	D	D	D	F	E	E	E	F
1/10	F	F	E	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	E	F	F
1/11	F	F	F	F	F	F	F	F	F	F	D	A	A	A	B	B	D	E	F	F	F	F	F	F
1/12	F	F	F	F	F	F	F	F	E	C	C	C	C	D	D	D	D	D	E	E	E	E	E	E
1/13	E	F	F	F	F	F	F	E	E	E	A	A	B	A	B	C	D	F	E	F	F	F	F	F
1/14	F	F	F	F	F	F	F	F	F	F	A	A	A	B		C	D	D	E	E	F	E	F	F
1/15	F	F	F	E	D	D	D	E	E	C	D	D	B	B	B	C	E	F	F	F	F	F	F	F
1/16	F	F	E	E	F	F	F	F	F	F	B	A	A	B	B	C	D	E	E	E	E	F	F	F
1/17	F	F	F	F	F	F	F	F	F	E	B	A	A	A	A	A	C	D	E	E	F	F	F	F
1/18	F	F	F	F	F	F	F	F	F	F		A	B	B	B	B	B	E	F	F	F	F	F	F
1/19	F	F	F	F	F	F	F	F	F	E	A	A	A	B	B	A	D	E	F	F	F	E	F	F
1/20	F	F	F	F	F	F	F	F	F	E	A	A	A	A	A	B	C	E	E	F	F	F	F	F
1/21	F	F	F	F	F	F	F	F	F	E	A	C	B	B	B	B	D	D	E	E	F	F	F	F
1/22	F	E	E	D	D	D	E	E	D	B	C	A	A	A	A	B	D	D	D	D	D	D	D	D
1/23	D	D	D	D	D	D	D	D	D	C	A	A	A	A	B	B	C	D	E	E	E	E	E	E
1/24	E	E	F	F	F	F	F	F	F	E	C	A	A	B	A	A	A	E	F	E	F	F	F	F
1/25	F	F	F	F	F	F	F	F	F	D	D	A	B	B	B	B	B	E	E	E	F	F	F	F
1/26	F	F	F	F	F	F	F	F	F	B	B	B	C	C	D	C	C	D	E	E	E	E	F	F
1/27	F	F	F	F	F	F	F	F	F	A	B	B	B	B	B	B	C	E	F	E	F	F	F	F
1/28	F	F	F	F	F	F	F	F	F	D	A	A	B	B	B	B	B	E	F	F	F	F	F	F
1/29	F	F	F	F	F	F	F	F	F	E	A	A	A	B	B	B	D	E	E	F	E	F	F	F
1/30	F	F	F	F	F	F	F	F	F	C	C	A	A	B	A	A	B	D	F	F	F	F	F	F
1/31	F	F	F	F	F	F	F	F	F	E	B	A	B	B	B	B	C	D	F	F	F	F	F	E

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            C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
         STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                    PERIOD( 1/ 1/77 TO  1/31/77)

                      HOURLY WIND AND DIRECTION
                         A STABILITY CLASS

                                      HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

1/ 1

1/ 2

1/ 3

1/ 4

1/ 5                                                   2   3   3
                                                      NW  NW WNW
1/ 6                                               2   5
                                                   W  SW
1/ 7                                       3
                                         SSE
1/ 8                                               3
                                                 WNW
1/ 9                                               2   1
                                                 ENE ESE
1/10

1/11                                               2   2   4
                                                 NNE   N WSW
1/12

1/13                                           3   3       3
                                             ESE ESE       W
1/14                                           1   2   3
                                             NNE NNE WSW
1/15

1/16                                               3   2
                                                 SSW  SW
                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                        PERIOD( 1/ 1/77 TO  1/31/77)

                             HOURLY WIND AND DIRECTION
                               A STABILITY CLASS

1/17                                             4   3   4   3   3
                                               ESE   E ENE ESE ESE
1/18                                             2
                                                NE
1/19                                         3   2   3           3
                                           ENE NNE  NW         NNW
1/20                                         2   2   3   2   2
                                            NE   E WSW  SW WSW
1/21                                         2
                                           ENE
1/22                                             2   2   3   2
                                               SSW   S   S   E
1/23                                         2   3   2   4
                                             W  NW  NW NNW
1/24                                             3   3       3   3   3
                                                NW NNE       N NNW  NW
1/25                                             2
                                               WSW
1/26

1/27                                     4
                                         S
1/28                                         1   3
                                           NNE   W
1/29                                         2   3   2
                                           NNE NNW   E
1/30                                             3   3       3   2
                                                NE NNE       N NNE
1/31                                             2
                                               NNE
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                 C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                      PERIOD( 1/ 1/77 TO  1/31/77)

                         HOURLY WIND AND DIRECTION
                           B STABILITY CLASS

                                           HOUR
         1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

1/ 1                                       3
                                         SSE
1/ 2

1/ 3

1/ 4                                           6  10   9   9   7
                                               W WNW   N   W WSW
1/ 5

1/ 6                                                       4   5   7
                                                         SSW SSW SSW
1/ 7                                           7  11
                                             SSW SSW
1/ 8                                                   4   6   8   7
                                                     NNW  NW  NW  NW
1/ 9                                                       2       7
                                                         ENE       S
1/10

1/11                                                           5   5
                                                              SW SSW
1/12

1/13                                                   5       7
                                                     WSW     WNW
1/14                                                       4
                                                           N
1/15                                                  10   7   7
                                                       S   S   W
1/16                                           8           5   4
                                              SW           S SSE
```

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             C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
           STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                      PERIOD( 1/ 1/77 TO  1/31/77)

                        HOURLY WIND AND DIRECTION
                           B STABILITY CLASS

1/17                         3
                           ESE
1/18                                        8    8    7    8    9
                                           SW  SSW  SSW  SSW  SSW
1/19                                             5    4
                                               WNW  WNW
1/20                                                       8
                                                         SSW
1/21                                        7    9    8    9
                                          SSW   SW   SW   SW
1/22                        3                              3
                          ESE                            NNE
1/23                                                  6    6
                                                      N   NW
1/24                                             4
                                                 N
1/25                                        7   10   10   10   10
                                           SW   SW   SW   SW  SSW
1/26                        5    9   10
                            S  SSW  SSW
1/27                             4    6    5    6   10   10
                               SSW   SW   SW   SW  SSW   SW
1/28                                        7    8    8    7    8
                                          WNW    W    W  WSW   SW
1/29                                             5    8   10
                                                 N    N    N
1/30                                             4              3
                                                 N            NNE
1/31                         3              5    8    5    8
                           NNE             SW  SSW   SW  SSW
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              C-3 SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
           STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                     PERIOD( 1/ 1/77 TO  1/31/77)

                       HOURLY WIND AND DIRECTION
                          C STABILITY CLASS

                                                 HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

1/ 1

1/ 2
                                                                  13       7
1/ 3                                                             SSW       S
                                               4                       6
1/ 4                                         WSW                     SSW

1/ 5

1/ 6

1/ 7
                                                   4
1/ 8                                             WNW
                                                                   3
1/ 9                                                             ENE

1/10

1/11
                                               6  12  12  12
1/12                                           S SSW SSW SSW
                                                                       4
1/13                                                                  NE
                                                                       5
1/14                                                                 WNW
                                              12                       5
1/15                                           S                     SSW
                                                                       4
1/16                                                                 NNW
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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                 STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                           PERIOD( 1/ 1/77 TO  1/31/77)

                               HOURLY WIND AND DIRECTION
                                  C STABILITY CLASS

1/17                                                                      3
                                                                        ESE
1/18

1/19

1/20                                                                      7
                                                                        SSW
1/21                                                  1
                                                    NNE
1/22                                              1
                                               ESE
1/23                                          3                           4
                                           WNW                           NW
1/24                                              1
                                                 NE
1/25

1/26                                                     13  13      12  14
                                                        SSW SSW     SSW SSW
1/27                                                                     12
                                                                         SW
1/28

1/29

1/30                                          1   2
                                            SSE   E
1/31                                                                      6
                                                                        SSW
                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                 STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                           PERIOD( 1/ 1/77 TO  1/31/77)

                             HOURLY WIND AND DIRECTION
                                 D STABILITY CLASS

                                                       HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24


1/ 1                                              4        14   16   16   15   16   17   17   14   16   14   16   13        14
                                                 SE       SSW  SSW  SSW   SW   SW  SSW  SSW  SSW  SSW  SSW  SSW   SW       SSW
1/ 2     15   16   15   15   14   17   16   14   15   16   16   15   15   15   17   17   12   11   13   10    9   19   19   13
        SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW  SSW    S  SSW    S  SSW    S    S
1/ 3     15   12   13    9    8    7   10   11   13   13   18   19   15   17        15         3   12    4    7        15   15
          S    S  SSE  SSE  SSE  SSE  SSE  SSE  SSE  SSE    S    S    S    S         S       SSW   SW  WNW   SW       SSW  SSW
1/ 4     15                                                                                6    3              0
        SSW                                                                               SW  NNE             SE
1/ 5                                  2              1    0    1                   5    5    3    3    2
                                    SSW            WSW   NW    N                 WNW  WNW  WNW    W  WNW
1/ 6                                                                                    8
                                                                                      SSW
1/ 7                                                                15   16   16   17    8
                                                                    SW   SW  SSW  SSW  SSW
1/ 8                                                  3                                 9   10    9    9
                                                      W                                NW   NW   NW  WNW
1/ 9                                                  2                                11   14   15
                                                     SE                               SSW    S  SSW
1/10                                             12   16   17   14   14   14   12   14   11    7
                                                  S    S  SSW  SSW  SSW    S    S  SSW  SSW    S
1/11                                                       2                            6
                                                          NE                          SSW
1/12                                                                     17   17   13    4    3
                                                                         SW  SSW   SW   SW  WSW
1/13                                                                                    2
                                                                                      SSE
1/14                                                                                    6    3
                                                                                       NW  WNW
1/15                          14   15   14                      14   15
                               S    S    S                       S  SSW
1/16                                                                                    1
                                                                                        W
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         C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
       STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                  PERIOD( 1/ 1/77 TO  1/31/77)

                    HOURLY WIND AND DIRECTION
                       D STABILITY CLASS

1/17                                                                                         4
                                                                                            SE
1/18

1/19                                                                                    2
                                                                                      NNE
1/20

1/21                                                                                    5    3
                                                                                      SSW    S
1/22                     5    4    4              3                                    1    1    1    0    2    3    2    2
                       SSE  ESE   SE             SE                                  NNW  WNW  WSW  SSW   SW  WSW  WSW  WNW
1/23      2    3    3    2    3    2    3    3    3                                         5
        NNW  WNW  WNW   NW  WNW  WNW  WNW  WNW  WNW                                        NW
1/24

1/25                                                   2    2
                                                     ESE  NNE
1/26                                                                           15              13
                                                                              SSW             SSW
1/27

1/28                                                   2
                                                       E
1/29                                                                                    9
                                                                                        N
1/30                                                                                         1
                                                                                             N
1/31                                                                                         5
                                                                                             S
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C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
PERIOD(1/ 1/77 TO 1/31/77)

HOURLY WIND AND DIRECTION
E STABILITY CLASS

HOUR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1/ 1	10 SSW	9 S	13 S	8 SSW	10 S	3 SSE	3 SSE	4 WSW															13 SSW	
1/ 2																								
1/ 3																						8 SW		
1/ 4		11 SSW	9 SW	5 SW	5 SW	3 SW	3 SW		5 SW										2 ESE	4 NW		2 SE		1 NW
1/ 5	0 NW	1 WSW	1 SSW					1 SE	0 SW												4 WNW	3 WNW	3 W	1 W
1/ 6										1 ESE	2 NE							5 S						
1/ 7		3 SSE			8 SSE	6 SSE	7 SSE	6 SE	7 SSE									7 S	8 SSE	4 ESE	4 SSE	7 SSE	6 SE	3 SE
1/ 8	5 ESE	3 SE	3 SE	3 E					3 W												9 WNW	9 NW	6 WNW	6 WNW
1/ 9	6 WNW																			6 S	4 SE	6 S	6 S	
1/10			8 S		4 SE		9 S	11 S											9 S			3 S		
1/11																		8 S						
1/12									8 S										7 S	4 SSE	2 NE	3 WSW	3 SSE	3 S
1/13	3 S							1 SE	0 ESE	2 E								2 S	3 SW					
1/14																			2 SW	3 S		3 SSW		
1/15				14 S				11 S	11 S								4 SSE							
1/16			10 S	9 SSW														2 S	1 S	3 W	3 W			

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                 C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                       PERIOD( 1/ 1/77 TO  1/31/77)

                          HOURLY WIND AND DIRECTION
                              E STABILITY CLASS

1/17                                         2                                   4   3
                                            SE                                  SE ESE
1/18                                                                          10
                                                                             SSW
1/19                                         3                               1               0
                                             E                               E             NNE
1/20                                         2                               8   4
                                           ESE                             SSW   E
1/21                                         5                                   4   4
                                           SSE                                 SSE SSE
1/22         4   5               4   5
           SSW SSW              SE  SE
1/23                                                                             2   1   0   1   2   1
                                                                               NNW NNW NNW NNW NNW   N
1/24     2   1                               1                               3       9
         N  NE                             ESE                             NNW     SSW
1/25                                                                         9  10   3
                                                                           SSW SSW SSE
1/26                                                                            12  11   3   2
                                                                               SSW   S ESE  SE
1/27                                                                        10  10   8
                                                                            SW SSW SSW
1/28                                                                         9
                                                                           SSW
1/29                                         2                               5   1       1
                                             E                             NNE   N     SSE
1/30
1/31                                         2                                                   9
                                           ESE                                                 SSE
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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                 STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                            PERIOD( 1/ 1/77 TO  1/31/77)

                               HOURLY WIND AND DIRECTION
                                  F STABILITY CLASS

                                                         HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

1/ 1

1/ 2

1/ 3

1/ 4                                       7                                                                         1
                                         SSW                                                                       SSW
1/ 5                     1    2    0
                         S  SSW    E
1/ 6      0    0    1    2    4    2    2    0    0                                             6    3    1    0    2    2
         SE  WSW   NE  ESE   SE  ESE   SW  SSE   SW                                           ESE    S    N   NE   SE  SSE
1/ 7      2         4    5
        SSE        SE  SSE
1/ 8                          2    4    5    4
                              E   SE  SSE  SSE
1/ 9           4         3    1    1    0    2    2                                                                      3
             WNW         W  WSW   SW    W  ESE   SE                                                                     SE
1/10      4    6         4         4                                                                  6    3         4    2
         SE  SSE        SE       SSE                                                                  S  SSE        SE  ESE
1/11      3    1    2    3    2    2    1    0    1    3                                        5    4    6    5    3    3
          S    E    S    S    S  SSW  NNE    E  ENE  ESE                                       SE  ESE   SE  ESE  ESE   SE
1/12      2    5    4    5    6    5    3    4
        SSE  SSE   SE   SE   SE  ESE   SE  SSE
1/13           3    2    2    2    4    2                                                         4    3    2    2    2
              SE  ESE   SE  ESE   SE  SSE                                                        SW   SW    W  SSW  WSW
1/14      1    0    0    1    0    5    2    1    2    1                                                   2         5    4
          E  NNE    E  NNE   NE   SE  SSE   SE    S   NE                                                  SE         S  SSW
1/15      6    9    7                                                                       5    7    5    3    3    4    4
          S    S    S                                                                     SSE  SSW  SSW  SSW    S  SSW    S
1/16      5    6              4    3    5    6    4    5                                                        3    2    1
        SSE  SSE              S  SSE  SSW  SSW    S  SSE                                                        W  WSW  SSE
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                 C-3 SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
           STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                       PERIOD( 1/ 1/77 TO  1/31/77)

                         HOURLY WIND AND DIRECTION
                           F STABILITY CLASS

1/17      2    4    4    3    1    3    4    6    5                                                           1    2    2    0
        SSW  SSW  SSW    S  SSE   SE    S    S    S                                                          SE   NE    N   SE
1/18      2    1    1    1    2    2    1    2    2    3                                            2    2    3    3    7    3
        NNW    S  SSE    W    W  ESE    S  SSE  SSE   SE                                          ESE   SE  ESE   SE    S   SE
1/19      5    2    8    7    3    6    1    2    2                                                 3    1    0         0    1
          S  SSE  SSW    S  ESE  SSE    N  ENE    E                                               SSE  SSW    N       ENE  ESE
1/20      0    0    2    3    2    2    1    4    2                                                      6    4    3    3    4
        ESE    E   SW    S  SSE   SE    S    S    S                                                     SE  ESE  ESE  SSE   SE
1/21      2    1    2    2    2    1    2    3    2                                                           3    3    3    5
        SSE  ENE  ENE  ESE   SW   SE  ESE   SE  ESE                                                           S  SSE    S  SSW
1/22      7
        SSW
1/23

1/24                2    3    3    3    2    2    1                                                 3         5    1    2    2
                    E    E    E    E    E    E  ESE                                               WSW       SSW    S   SE  ESE
1/25      3    3    2    2    2    2    2    2    2                                                           2    2    3    4
        ESE  ESE  ESE  SSE    S  ESE  SSE   SE   SE                                                          SE  ESE   SE   SE
1/26      3    5    4    4    3    3    2    2    2                                                                     3    2
        SSE  SSE   SE  SSE   SE    S  SSE   SE   SE                                                                   ESE  ESE
1/27      3    2    3    2    3    3    4    2    2                                                           3    2    2    2
        SSE  SSW    S   SE   SE  SSE    S   SE  ESE                                                         SSE  SSE   SE  SSE
1/28      1    2    1    1    3    1    4    3    4                                                 9    7    2    1    4    1
        SSE    S  SSW   SE    S  SSW   SE   SE    S                                               SSW  SSW   SE   SE  SSW  SSE
1/29      1    1    0    3    2    3    4    4    5                                                      3         2    1    1
        SSE    S    E    S   SE   SE  ESE  SSE    S                                                      E       WSW  WSW  NNE
1/30      0    0    0    0    2    1    0    0    1                                                 3    5    2    2    1    2
          N   SW   SW   NW   SW    N    S    E   NW                                                 S    S    S  SSW    S    S
1/31      2    3    1    3    3    2    2    2    4                                                 2    5    5    5    5
        SSE  SSE   SE  ESE   SE    S   SW   SE  ESE                                                SE  SSE   SE  ESE  SSE
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C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(1/ 1/77 TO 1/31/77)

HOUR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1/ 1	D	D	D	B	B	B	D	A	A	A	D	D	D	D	D	D	D	C	D	C	D	C	D	D
1/ 2	D	D	C	C	C	D	D	C	D	D	D	D	D	D	D	D	C	B	C	B	B	D	D	C
1/ 3	D	C	C	B	B	B	B	B	C	C	D	D	D	D	C	D	B	A	B	A	B	B	C	C
1/ 4	C	C	B	B	D	D	D	E	D	A	B	B	B	B	B	B	B	A	C	A	A	D	D	D
1/ 5	A	C	C	D	E	D	A	D	C	A	A	A	A	A	A	B	A	A	A	A	A	A	B	A
1/ 6	B	D	D	D	F	E	E	E	E	D	C	A	A	B	B	B	B	D	E	E	E	E	E	E
1/ 7	F	D	E	D	D	D	C	D	B	A	B	B	D	D	D	D	B	B	D	C	B	B	B	B
1/ 8	B	D	D	E	E	D	E	E	D	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B
1/ 9	C	D		D	D	C	D	D	D	A		A	A	A	A	B	C	C	C	B	C	B	B	D
1/10	D	D	D	D	D	D	B	B	B	D	D	D	D	D	C	D	B	B	C	D	D	D	E	E
1/11	E	F	E	E	F	F	E	E	F	E	A	A	A	A	B	B	B	D	E	F	F	F	F	F
1/12	F	E	F	F	F	F	E	D	D	B	C	C	C	D	D	C	A	A	D	C	C	D	D	D
1/13	D	D	E	D	E	D	D	D	D	C	A	A	B	A	B	B	A	A	D	D	E	E	E	E
1/14	E	E	E	E	F	F	F	F	F	E	A	A	A	B		B	B	A	A	A	D	D	E	E
1/15	D	E	E	E	D	D	D	E	D	C	D	D	B	B	B	B	C	E	E	E	E	D	E	E
1/16	D	E	E	D	F	F	F	F	F	E	B	A	A	B	B	B	A	A	D	D	D	E	E	E
1/17	E	F	F	E	F	E	E	E	E	D	A	A	A	A	A	A	A	D	D	D	E	E	E	E
1/18	F	F	E	F	F	E	F	F	F	F		A	B	B	B	B	B	D	E	E	F	F	E	F
1/19	E	E	F	F	F	F	F	F	E	E	A	A	A	B	B	A	A	D	E	F	E	E	E	E
1/20	F	F	F	F	F	F	E	F	F	E	A	A	A	A	A	B	B	E	E	F	E	E	E	F
1/21	F	F	F	F	F	F	E	F	E	D	A	A	B	B	B	B	B	B	D	E	E	E	E	E
1/22	E	D	B	B	A	B	D	D	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A
1/23	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	A	B	B	D	D	D	D	B
1/24	A	B	E	E	E	F	F	E	F	E	A	A	A	B	A	A	A	A	E	E	F	E	E	E
1/25	E	E	F	F	F	F	E	F	E	D	A	A	B	B	B	B	B	D	D	D	E	E	E	E
1/26	F	F	E	F	E	D	E	E	D	B	B	B	C	C	D	C	C	B	C	D	D	D	F	E
1/27	F	E	E	F	F	E	E	E	E	A	B	B	B	B	B	B	C	C	D	D	D	E	F	E
1/28	F	F	F	F	F	E	F	F	E	A	A	A	B	B	B	B	B	D	F	F	E	E	F	E
1/29	E	F	F	E	F	F	F	E	F	D	A	A	A	B	B	B	B	D	D	D	D	E	E	E
1/30	F	E	E	F	E	F	E	F	F	D	A	A	A	B	A	A	A	A	E	F	E	E	E	E
1/31	F	F	E	F	F	E	E	F	F	D	A	A	B	B	B	B	B	B	E	E	E	E	E	E

```
                         C-3 SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINAITON USING DT/DZ (LEVEL 2)
                                  PERIOD( 1/ 1/77 TO  1/31/77)

                                   HOURLY WIND AND DIRECTION
                                      A STABILITY CLASS

                                                   HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

1/ 1                                        5    4    3
                                           SW   SE  SSE
1/ 2

1/ 3                                                                                        4         5
                                                                                           SW       WNW
1/ 4                                                  4                                    3         5    0
                                                    WSW                                  NNE        NW  NNW
1/ 5      0                        2                   1    0    0    2    2    2         5    4    3    3    5    5         1
          N                      SSW                   W    W    N  WNW   NW  WNW        NW  WNW    W  WNW  WNW  WNW        NW
1/ 6                                                            2    5
                                                                S   SW
1/ 7                                                  3
                                                      S
1/ 8                                                  4    3    2
                                                      W  WNW  WNW
1/ 9                                                  2         2    1    2    3
                                                     SE         E  ESE  ENE  ENE
1/10

1/11                                                       1    2    2    4
                                                          NE   NE   NW  WSW
1/12                                                                                   6    4
                                                                                      SW  WSW
1/13                                                       3    3         3              2    2
                                                          SE  ESE       WSW            SSE  SSW
1/14                                                       1    2    3                        3    2    3
                                                          NE    N    W                      WNW  WSW  SSW
1/15

1/16                                                            3    1                   1    2
                                                              SSW  WSW                   W  SSW
                    C-3 SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                   STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                            PERIOD( 1/ 1/77 TO  1/31/77)

                              HOURLY WIND AND DIRECTION
                                 A STABILITY CLASS

1/17                                           3   3   3   4   3   3   3
                                             ESE ESE   E   E ESE ESE ESE
1/18                                               2
                                                  NE
1/19                                           3   2   3           2   2
                                             ENE NNE NNW          NW   N
1/20                                           2   2   4   2   2
                                              NE  NW   W WSW WSW
1/21                                           2   1
                                             ESE NNW
1/22                   6                   5   3   2   3   2   3   2   3   1       2   2   4   3   2   2
                      SE                  SE ESE SSE SSW SSW   S ESE NNE ENE      SW WSW WSW   W WNW  NW
1/23   3   3   3   3   3   2   3   3   2   3   2   3   2   4           5
     NNW NNW  NW  NW  NW WNW WNW WNW WNW WNW   W  NW  NW NNW          NW
1/24   2                                       1   3   4       3   3   3   4
       N                                     WSW NNW NNE      NW NNW  NW NNW
1/25                                           2   2
                                              NE  NW
1/26
1/27                                       6
                                         SSW
1/28                                       2   1   4
                                          SE NNE  NW
1/29                                           2   3   2
                                              NE   N NNW
1/30                                           2   3   3       4   2   3   1
                                               E  NE NNE     NNE NNE NNE NNE
1/31                                           2   3
                                              NE ENE
                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                              PERIOD( 1/ 1/77 TO  1/31/77)

                                  HOURLY WIND AND DIRECTION
                                      B STABILITY CLASS

                                           HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

1/ 1                    11   14    5
                       SSW  SSW    S
1/ 2                                                                                         13        12   11
                                                                                            SSW       SSW  SSW
1/ 3                    10    9    8   11   13                                          8        13         8   10
                         S  SSE  SSE    S    S                                          S        SW        SW   SW
1/ 4               11    7                              6   10   10    9    7    7    7
                   SW   SW                              W  WNW  WNW    W  WSW  SSW   SW
1/ 5                                                                                5                             3
                                                                                   NW                            NW
1/ 6      0                                                          5    6    7    9
        SSW                                                        SSW  SSW  SSW  SSW
1/ 7                                             9         7   12                        9    9              4    8    8    5
                                                 S       SSW  SSW                      SSW  SSW            SSE    S  SSE   SE
1/ 8      7                                                     4    6    8    7    9   11   10   10   10   10    7    8
        ESE                                                   WNW   NW   NW   NW   NW   NW   NW   NW   NW   NW   NW  WNW
1/ 9                                                                                7                   7         8    7
                                                                                  SSW                 SSW       SSW  SSW
1/10                               11   15   16                                          13   10
                                  SSW  SSW  SSW                                         SSW  SSW
1/11                                                                           5    5    7
                                                                              SW  SSW  SSW
1/12                                                  7
                                                    SSW
1/13                                                                  5         7    4
                                                                    WSW       WNW   NE
1/14                                                                       5         5    6
                                                                           W       WNW   NW
1/15                                                                 11    8    7    5
                                                                    SSW  SSW    W   SW
1/16                                                       2              5    4    4
                                                          SW              S  SSE  WNW
```

RADIAN
CORPORATION

```
C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD( 1/ 1/77 TO  1/31/77)

HOURLY WIND AND DIRECTION
B STABILITY CLASS

1/17

1/18                                                  9   8   7   9  10
                                                     SW SSW  SW SSW SSW
1/19                                                      5   4
                                                        NNW NNW
1/20                                                              9   9
                                                                SSW SSW
1/21                                                  7   9   9  10   6   4
                                                    SSW  SW  SW  SW  SW SSW
1/22         8   5       6                                            0
           SSW SSE      SE                                           SE
1/23                                                          6   6       6   3                   1
                                                            NNE   N      NW   N                 NNW
1/24     1                                                5
         E                                              NNE
1/25                                                  7  10  11  11  12
                                                     SW  SW  SW  SW  SW
1/26                                      6  10  11                      17
                                          S SSW SSW                     SSW
1/27                                          4   7   6   7  10  10
                                             SW  SW  SW  SW SSW  SW
1/28                                                  7   8   8   7   8
                                                    WNW   N   W   W  SW
1/29                                                      5   8  10   9
                                                        NNW NNW   N   N
1/30                                                      5
                                                          N
1/31                                                  5   8   6   9   7   6
                                                     SW  SW  SW SSW SSW SSW
```

```
                         C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                      STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                                 PERIOD( 1/ 1/77 TO  1/31/77)

                                   HOURLY WIND AND DIRECTION
                                      C STABILITY CLASS

                                                         HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

1/ 1                                                                                          16        17        17
                                                                                              SW       SSW        SW
1/ 2               18   19   18             16                                           14        15                       15
                  SSW  SSW  SSW            SSW                                          SSW       SSW                        S
1/ 3          13   14                            15   14                         14                                     19   17
               S    S                           SSE  SSE                        SSW                                     SW   SW
1/ 4     18   14                                                                                    3
         SW   SW                                                                                    E
1/ 5           1    1                             0
             NNW    N                            SW
1/ 6                                                        2
                                                            E
1/ 7                                    9                                                                4
                                        S                                                               SE
1/ 8
1/ 9      7                        0                                                     13   17   18        4
         NW                      WSW                                                    SSW  SSW  SSW       SSE
1/10                                                                             12                  12
                                                                                SSW                 SSW
1/11
1/12                                                       13   12   13              15                  4    3
                                                          SSW   SW  SSW              SW                 SSW  WSW
1/13                                                   2
                                                     ESE
1/14
1/15                                                  13                                  3
                                                       S                                 SE
1/16
```

```
                              C-A SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                            STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                                      PERIOD( 1/ 1/77 TO  1/31/77)

                                         HOURLY WIND AND DIRECTION
                                             C STABILITY CLASS

1/17

1/18

1/19

1/20

1/21

1/22

1/23

1/24

1/25

1/26                                                   14  14      13  16      16
                                                      SSW SSW     SSW SSW     SSW
1/27                                                                   13  13
                                                                       SW  SW
1/28

1/29

1/30

1/31
```

```
                C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                      PERIOD( 1/ 1/77 TO  1/31/77)

                       HOURLY WIND AND DIRECTION
                          D STABILITY CLASS

                                                         HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24


1/ 1     14   12   13                   5                  15   17   17   16   18   19   19        20        19        16   18
        SSW  SSW  SSW                   S                 SSW  SSW  SSW   SW   SW   SW   SW       SSW       SSW       SSW  SSW
1/ 2     19   20                  20   20        18   18   18   16   17   16   18   19                           22   22
        SSW  SSW                 SSW  SSW       SSW  SSW  SSW  SSW  SSW   SW  SSW  SSW                          SSW    S
1/ 3     18                                                19   21   16   18        16
          S                                                 S    S  SSW    S         S
1/ 4                         7    5    4         7                                                                1    0    0
                           WSW  WSW  WSW        SW                                                               SE   SE  WNW
1/ 5                    1         0         1
                        S       ESE       SSE
1/ 6           0    0    2                        2                                   7
             WSW  ENE  ESE                       SE                                   S
1/ 7           5         7    7    6         7                        15   17   18   19             9
               S       SSE    S    S       SSE                        SW   SW  SSW  SSW             S
1/ 8           4    2              3              3
              SE  SSE            ESE              W
1/ 9           7         3    1         0    0    1                                                                          4
             WNW       WNW  WNW        NW  ESE   SE                                                                          S
1/10      5    7   11    5    6    7                  19   19   16   15   16        16                  8    5    5
        SSE    S  SSW    S    S  SSW                 SSW  SSW  SSW  SSW  SSW       SSW                SSW  SSW  SSW
1/11                                                                                    9
                                                                                        S
1/12                                    6   10                        19   19                  8              4    4    4
                                        S  SSW                        SW   SW                SSW            WSW    S  SSW
1/13      4    4         2         3    2    1    1                                            3    3
        SSW    S         S        SE  SSW    S    S                                          WSW   SW
1/14                                                                                                     2    6
                                                                                                         S  SSW
1/15      9                  17   17   15        15        14   16                                            2
        SSW                   S    S    S       SSW         S  SSW                                          SSW
1/16      5             13                                                                     2    3    5
          S            SSW                                                                   WSW  WNW  WNW
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(1/ 1/77 TO 1/31/77)

HOURLY WIND AND DIRECTION
D STABILITY CLASS

```
                                              3                                        5    6    3
1/17                                          S                                       SE   SE    E
                                                                                      14
1/18                                                                                 SSW
                                                                                       1
1/19                                                                                 ENE
1/20
                                              6                                             4
1/21                                        SSE                                           SSE
          5                        6    7
1/22    SSW                       SE  SSE
                                                                                                 2    1    2    2
1/23                                                                                           WNW    N  NNW   NW
1/24
                                              2                                       11   13    5
1/25                                        SSE                                       SW  SSW  SSW
                              6              3                         16                        13    3    3
1/26                        SSW              S                         SW                         S  SSE    S
                                                                                           15   12    5
1/27                                                                                      SSW  SSW    S
                                                                                      12
1/28                                                                                  SW
                                              2                                        6    3    4    2
1/29                                        ESE                                      NNE    N  ENE   SE
                                              1
1/30                                          S
                                              2
1/31                                         SE
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(1/ 1/77 TO 1/31/77)

HOURLY WIND AND DIRECTION
E STABILITY CLASS

HOUR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1/ 1																								
1/ 2																								
1/ 3																								
1/ 4								8 SW																
1/ 5					1 WSW																			
1/ 6					3 ESE	2 ESE	2 SSW	0 NE	0 N										4 ESE	3 SSW	1 N	0 E	2 S	5 SSW
1/ 7	3 SSW		5 SSE																					
1/ 8				3 ESE	1 S		4 SE	3 SSE																
1/ 9																								
1/10																							5 S	2 S
1/11	6 SSW	1 SSW	3 SSW	7 SSW			1 S	0 NE		1 ESE									7 SSE					
1/12		5 SSE			7 SSE	5 SE	5 SSE																	
1/13			1 SSW		1 ESE																3 WSW	2 N	1 ESE	0 WNW
1/14	0 NW	0 NW	0 ENE	0 SW						0 W													8 SSW	6 SSW
1/15		12 SSW	10 S	15 S				14 SSW										3 S	7 SSW	7 SW	3 SW		6 SW	4 SSW
1/16		6 S	13 SSW		6 SSW	3 SSW				5 S												3 WNW	2 W	1 SW

```
                C-3 SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                        PERIOD( 1/ 1/77 TO  1/31/77)

                          HOURLY WIND AND DIRECTION
                             E STABILITY CLASS

1/17     2           7   4   3   7   9   8                                               0   2   3   1
       SSW         SSW SSW   S SSW SSW SSW                                             ENE  NE   N  NE
1/18     1       1           1                                                   4   2          11
         W      SE         SSE                                                   S  SE         SSW
1/19     6   4                           1   2                                   2       1   0   0   0
         S   S                         ESE  NE                                  SE       W   W SSW SSE
1/20     0   1           2       2       6   3                              10   4       2   2   2
         E ESE         SSW     SSW     SSW SSW                             SSW   E     ESE   E SSE
1/21                     2   1   2       2                                           5   3   2   3   5
                        SW  SW ESE      SE                                         SSE SSW   S SSW  SW
1/22     8
        SW
1/23
1/24             2   3   2   3       2   4   3                                   3  10       5   3   2
               SSE WNW SSE SSW       S SSW   S                                 WNW SSW      SW SSW   S
1/25     1   1       2   3   1   1       1                                               3   1   2   3
        SE ESE       S SSW ESE SSE      SE                                             SSW ESE  SE SSE
1/26     5       3   4   3       4   3                                                           2   3
       SSW     SSE   S   S     SSW SSW                                                          SE SSE
1/27     3   8   5   2   3   4   7   4   2                                                   3   2   4
       SSE SSW SSW SSE SSE   S SSW SSW   S                                                 SSW   S SSW
1/28     3               5   4           7                                               2   1       2
       SSW             SSW SSW         SSW                                             SSE SSE      SW
1/29     0           4   3           2                                                       1   2   2
       SSE         SSW SSW          SE                                                     WSW   W WSW
1/30     0   6   1   1   2       0                                               2       5   5   4   6
        NW WNW WSW   W  SW      SW                                             SSE     SSW SSW SSW SSW
1/31             1           2   2                                               2   4   5   6   7  10
                 S           S SSW                                             SSE SSE SSE  SE SSE   S
                 C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
            STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                       PERIOD( 1/ 1/77 TO  1/31/77)

                          HOURLY WIND AND DIRECTION
                             F STABILITY CLASS

                                  HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

1/ 1

1/ 2

1/ 3

1/ 4

1/ 5

1/ 6

1/ 7

1/ 8

1/ 9

1/10

1/11                         7    5              0                                                    3    7    3    2    1
                           SSW  SSW             SW                                                   SE  SSE   SE   SE   SE
1/12      1         4    7
         SF       SSE    S
1/13

1/14                         2    5    3    4    5
                           NNE   SF   SE  SSE  SSE
1/15

1/16                                   7    6    4
                                      SW   SW   SW
```

```
                C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
              STABILITY CLASS DETERMINAITON USING DT/DZ (LEVEL 2)
                        PERIOD( 1/ 1/77 TO  1/31/77)

                          HOURLY WIND AND DIRECTION
                             F STABILITY CLASS

1/17         5  10
            SW SSW
1/18         2       0   2       2   3   4   4                                           2   3       4
           ESE     NNE   W       S   S   S SSE                                          SE  SE       S
1/19            12   9   3   5   2   2                                               1
               SSW SSW SSE SSE   W  NE                                             ESE
1/20             1   2       1       7                                               5               4
               SSW   S     SSE     SSW                                              SE             SSE
1/21     2   0   2   2               4
        SW  NW ENE  SE              SE
1/22

1/23

1/24                             1                                                       9
                               SSE                                                     SSW
1/25             0                   0
                NE                 SSE
1/26         6
             S
1/27

1/28         6   3   3           4   3                                          10   8           4
           SSW SSW SSW         SSE   S                                          SW  SW          SW
1/29         0   1           3   2       5
           SSW SSW         SSE ESE     SSW
1/30                         1       1   0                                           4
                           NNW     ESE NNW                                           S
1/31     4   4       2   2           1   2
       SSW SSW     SSE SSE         SSE SSE
1PYSTAR
```

APPENDIX A

STABILITY WIND ROSE DIAGRAMS

APPENDIX A
STABILITY WIND ROSE DIAGRAMS

According to the data presented in AEC Safety Guide No. 23, the relationships between stability classes and σ_Θ are as follows (the values shown are averages for each stability classification...σ_Θ is the standard deviation of horizontal wind direction fluctuations).

Stability Classification	Pasquill Categories	Average Values σ_Θ (degrees)
Extremely Unstable	A	25.0°
Moderately Unstable	B	20.0°
Slightly Unstable	C	15.0°
Neutral	D	10.0°
Slightly Stable	E	5.0°
Moderately Stable	F	2.5°

Stability wind roses obtained at the trailers in the monitoring network are displayed in the following tables. Because of the relatively low heights above the surface (9 meters) at which the wind data is taken, the stability distributions are skewed toward the unstable end of the spectrum. That is, the unstable classes (A, B, and C) have a much higher frequency of occurrence than would be obtained with the Pasquill method of stability categorization (or with instruments at higher levels).

Table 1 depicts the frequency distribution of Pasquill stability categories based on σ_Θ from data collected by M. M. Pendergast and T. V. Crawford at the Savannah River Plant ("Actual Standard Deviations of Vertical and Horizontal Wind Direction Compared to Estimates from Other Measurements", Symposium on Atmospheric Diffusion and Air Pollution, September 9-13, 1974). Three distinct range patterns of stability class

distributions were observed: low, mid, and high, according to the height at which the σ_Θ measurements were taken.

TABLE 1

FREQUENCY DISTRIBUTION OF PASQUILL STABILITY CATEGORIES

Height, m	Stability Categories based on σ_θ							
	A $\sigma_\theta > 23$	B $18 \le \sigma_\theta < 23$	C $13 \le \sigma_\theta < 18$	D $8 \le \sigma_\theta < 13$	E $4 \le \sigma_\theta < 8$	F $2 \le \sigma_\theta < 4$	G $\sigma_\theta < 2$	
10	22.6	13.9	21.8	23.9	8.9	0.4	3.5	LOW RANGE
35	19.3	11.3	19.4	32.4	15.9	0.7	0.5	
91	9.6	6.7	13.5	21.7	29.5	15.4	2.5	MID RANGE
137	9.3	5.3	11.7	20.8	28.5	18.4	5.5	
182	7.0	2.9	6.8	17.1	25.9	25.6	14.7	HIGH RANGE
243	7.7	4.3	9.4	17.7	27.6	22.9	10.4	
304	7.2	3.7	8.0	17.2	23.7	23.9	11.3	

Also, Figure 1 (from D. H. Slade, Meteorology and Atomic Energy, 1968, p. 52) demonstrates that the line representing very stable conditions (which by their nature are associated with light winds) branches into three separate lines near the ground. The curve at the left represents the smallest values of σ_Θ usually observed. The curve that branches off to the right reflects the contribution of very low-level wind direction meander to the total standard deviation. These meandering oscillations decrease in amplitude very rapidly with height under stable conditions. The central curve represents typical inversion conditions. Actually, for a given stability condition, values of σ_Θ will always be greater when the wind is light than when it is strong. This phenomena is most noticeable in the lowest layers.

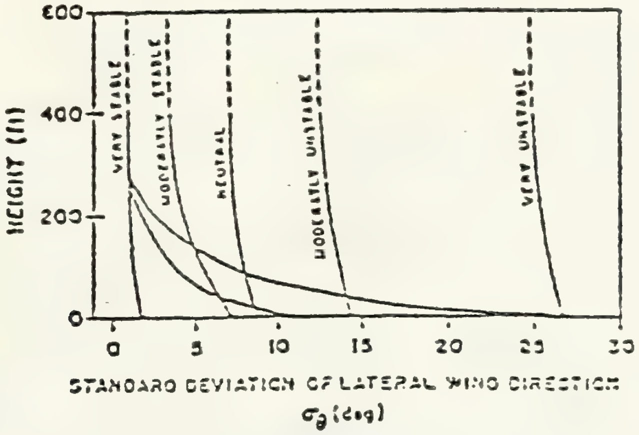

FIGURE 1

The vertical variation of the lateral wind-direction standard deviation (σ_Θ) for various stability regimes. The curves represent average or typical conditions with the exception of the two outer "very stable" lines, which represent extremes.

The large surface values of σ_Θ for unstable conditions do not decrease very rapidly with height. As in the case of very stable conditions, the greatest lateral fluctuations during a very unstable thermal structure occur with very light winds. As a general rule, for a given insolation condition, increasing wind speeds are associated with profiles of σ_Θ that tend toward neutral stability.

The majority of the trailers in the network recorded very light winds throughout the month. Therefore, the stability distributions had a predominance of high σ_Θ values and, hence, unstable classifications. Those trailers with the highest average winds (and fewest nearby obstacles to the flow) generally had the more reasonable and representative low-level stability class distributions.

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                                         STABILITY WIND ROSE DIAGRAM

                                           C-B SHALE OIL PROJECT
                              LEVEL =  6 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - A
                                                              WIND DIRECTION
                      N   NNE   NE   ENE    E   ESE    SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW  TOTAL  %
GROUP MAX SPEED     10.   8.    7.   3.    4.    5.    6.   8.    7.   8.    9.   6.    9.   7.    5.   7.
    MPH


   GT   24     :                                                                                             :       0.

 18 -   24     :                                                                                             :       0.

 12 -   18     :                                                                                             :       0.

  7 -   12     :     6     2    1                            1     4     6     4          4     2          4 :   34  3.

  3 -    7     :    30    18   13     6    11    10    18   14    19    23    41    17   17     8    10   27 :  279 22.

   LT    3     :    59    63   75    99    98    73   101   52    59    53    42    38   38    26    15   45 :  939 75.

    TOTAL      :    95    83   89   105   109    83   119   67    82    82    87    55   59    36    25   76 : 1252

   PERCENT     :    8.    7.   7.    8.    9.    7.   10.   5.    7.    7.    7.    4.   5.    3.    2.   6. :     100.
                ...............................................................................................

                              TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        365(  29.15 %)
```

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```
                                     STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                          LEVEL =  8 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - D
                                                       WIND DIRECTION
                       N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW   TOTAL  %
GROUP MAX SPEED       7.   4.   5.   3.   4.   5.   4.   9.  10.  14.  14.   8.  10.   7.   6.   9.
    MPH
                                                                                                      :        0.
    GT   24    :
                                                                                                      :        0.
  18 -   24    :
                                                                  6    1                              :     7  1.
  12 -   18    :
                                                        4   15   17   11    3    6    1             2 :    60  9.
   7 -   12    :   1
   3 -    7    :   5    9    9   11    8   16    8   18   27   34   21   15   13   18    7    1 :   220 32.
    LT    3    :  12   25   32   30   54   40   36   21   39   37   16   13   13   27    9    4 :   408 59.
     TOTAL     :  18   34   41   41   62   56   44   43   81   94   49   31   32   46   16    7 :   695
    PERCENT    :  3.   5.   6.   6.   9.   8.   6.   6.  12.  14.   7.   4.   5.   7.   2.   1. :       100.
                  ...............................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        94(  13.53 %)
```

```
                                          STABILITY WIND ROSE DIAGRAM

                                             C-B SHALE OIL PROJECT
                                  LEVEL =  8 FEET  PERIOD( 1/ 1/77 TO  1/31/77)
STABILITY CLASS - C
                                                                   WIND DIRECTION
                          N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW   TOTAL  %
GROUP MAX SPEED          7.    6.    5.    5.    5.    5.    9.   13.   19.   17.   15.   13.    8.   10.    9.    7.
    MPH

   GT    24     :
                                                                                                                   :        0.
  18 -   24     :
                                                                        2
                                                                                                                   :     2  0.
  12 -   18     :                                                  7    69   154    14     1                       :   245  8.
   7 -   12     :    1                                       1    40   142   360    59     9     4    26    11     1 :   654 22.
   3 -    7     :   10    14    23    18    29    55    67    98   103   181    77    34    20    85    46     3 :   863 29.
   LT     3     :   23    42    58    91   143   131   101    85    97   137    85    45    61    86    37     2 :  1224 41.
   TOTAL        :   34    56    81   109   172   186   169   230   413   832   235    89    85   197    94     6 ;  2988
   PERCENT      :   1.    2.    3.    4.    6.    6.    6.    8.   14.   28.    8.    3.    3.    7.    3.    0. :       100.
                ......................................................................................................

                              TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        239(   8.00 %)
```

```
                                STABILITY WIND ROSE DIAGRAM

                                  C-B SHALE OIL PROJECT
                         LEVEL =  8 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - D
                                                    WIND DIRECTION
                     N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED      9.   6.   7.    4.   5.    5.   6.   13.  20.   16.  15.  10.   7.   8.   9.   5.
     MPH

   GT   24   :                                                                                    :         0.
   18 - 24   :                                                   4                                :      4  0.
   12 - 18   :                                              1   71    54    5                     :    131  4.
    7 - 12   :    4          1                             24  181   139    9    1    1    5   10  :    375 11.
    3 -  7   :   15   12    34    56   43    79  149  170  144   132  122   22   23   59   31    2 :   1093 33.
   LT    3   :   26   35    61   131  146   181  166  129  122   188  292   53   55   70   32    7 :   1694 51.
    TOTAL    :   45   47    95   187  189   260  315  324  522   513  428   76   79  134   73    9 :   3297
   PERCENT   :    1.   1.    3.    6.   6.    8.  10.  10.  16.   16.  13.   2.   2.   4.   2.   0. :       100.
             ...........................................................................................

                 TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        277(   8.40 %)
```

```
                                         STABILITY WIND ROSE DIAGRAM

                                            C-B SHALE OIL PROJECT
                               LEVEL =  8 FEET   PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - E
                                                                  WIND DIRECTION
                         N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED         2.    2.    4.    4.    5.    4.    4.    5.   10.    4.    8.    3.    3.    5.    3.    2.
     MPH


    GT    24    :                                                                                                   :        0.
   18 -   24    :                                                                                                   :        0.
   12 -   18    :                                                                                                   :        0.
    7 -   12    :    1                                                 2           1                                :     4  1.
    3 -    7    :    2           2     4     9    12    16     8    15     7    28     1     1     2     1           :   108 35.
    LT     3    :    4     6     7    15    13    20    15    14    14    22    42     9     5     3     2     3     :   194 63.
     TOTAL      :    7     6     9    19    22    32    31    22    31    29    71    10     6     5     3     3     :   306
   PERCENT      :   2.    2.    3.    6.    7.   10.   10.    7.   10.    9.   23.    3.    2.    2.    1.    1.     :      100.
                ..........................................................................................................
                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        37(  12.09 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                           LEVEL =  8 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - TOTAL
                                                        WIND DIRECTION
                   N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED   10.   8.   7.   5.   5.   5.   9.  13.  20.  17.  15.  13.  10.  10.   9.   9.
     MPH

   GT    24   :                                                                             :        0.
 18 -    24   :                                             6                               :     6  0.
 12 -    18   :                                        8  140  214   20    1                :   383  4.
  7 -    12   :   13    2    2                   1    69  344  522   84   13   15   34   21    7 : 1127 13.
  3 -     7   :   62   53   78   95  100  172  258  308  308  377  289   89   74  172   95   33 : 2563 30.
   LT     3   :  114  162  228  362  453  453  422  315  340  454  493  156  172  221   98   52 : 4495 52.
   TOTAL      :  189  217  308  457  553  625  681  700 1138 1567  886  259  261  427  214   92 : 8574
  PERCENT     :   2.   3.   4.   5.   6.   7.   8.   8.  13.  18.  10.   3.   3.   5.   2.   1. :      100.
                ...........................................................................................

                        TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -      1012(  11.80 %)


                          PERCENTAGE OF A      STABILITY -  14.60 %
                          PERCENTAGE OF B      STABILITY -   8.11 %
                          PERCENTAGE OF C      STABILITY -  34.85 %
                          PERCENTAGE OF D      STABILITY -  38.45 %
                          PERCENTAGE OF E      STABILITY -   3.57 %
```

```
                                  STABILITY WIND ROSE DIAGRAM

                                       C-B SHALE OIL PROJECT
                          LEVEL = 30 FEET  PERIOD( 1/ 1/77 TO  1/31/77)
 STABILITY CLASS - A
                                                                WIND DIRECTION
                         N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW  TOTAL  %
GROUP MAX SPEED        13.    8.  10.    5.   5.    6.   7.   7.  10.    9.   7.    8.  12.   7.   9.  11.
  MPH


   GT    24     :
                                                                                                        :       0.
  18 -   24     :
                                                                                                        :       0.
  12 -   18     :   2
                                                                            1                           :    3  0.
   7 -   12     :   6     2    1                          1     2     7     5     3     4     2     1     2     6 :   42  6.
   3 -    7     :  31    23   21    17    24    40    27    20    16    22    28    16    13     9     9    19 :  335 45.
  LT      3     :  16    17   28    37    33    62    40    29    16    10    18    16     9    18     8    15 :  372 49.
   TOTAL        :  55    42   50    54    57   102    68    51    39    37    49    36    25    28    19    40 /  752
  PERCENT       :   7.    6.   7.    7.    8.   14.    9.    7.    5.    5.    7.    5.    3.    4.    3.    5. :     100.
                ........................................................................................................
                      TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        33(   4.39 %)
```

```
                                    STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                             LEVEL = 30 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - B
                                                     WIND DIRECTION
                    N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED    7.   8.   5.   4.   5.   6.   9.   9.  12.  14.  11.   8.  10.   9.   6.   7.
     MPH

   GT   24     :                                                                                :      0.

   18 -  24    :                                                                                :      0.

   12 -  18    :                                          1    1                                :   2  1.

    7 -  12    :    2                          2    1    9   10   10    4    4    4         1 :  47 13.

    3 -   7    :    5    9   12   14   18   20   16   18   21   22   13    8   16    9    5    3 : 209 56.

   LT    3     :    3    3    5   16   12   15   12    8    7    8    7    2    7    6    1    2 : 114 31.

     TOTAL     :   10   12   17   30   30   35   30   27   38   41   30   14   27   19    6    6 : 372

    PERCENT    :   3.   3.   5.   8.   8.   9.   8.   7.  10.  11.   8.   4.   7.   5.   2.   2. :     100.
               ..........................................................................................

                    TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        10(   2.69 %)
```

```
                                       STABILITY WIND ROSE DIAGRAM

                                          C-B SHALE OIL PROJECT
                              LEVEL = 30 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - C
                                                                     WIND DIRECTION
                           N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW   TOTAL  %
GROUP MAX SPEED           11.   5.   5.    6.   6.    6.  12.   13.  19.   19.  19.   13.  14.    9.  10.   12.
    MPH


    GT    24    :                                                                                         :        0.

   18 -   24    :                                                       3    11    2                          :   16  1.

   12 -   18    :                                        1     1   22   102   14     2    2              1 :  145 12.

    7 -   12    :   3                                    3    19   49    94   42    16   10   12     9    2 :  259 21.

    3 -    7    :  11   15   27   36   50   63   70   38   58    77   31    28   22   34    29    8 :  597 48.

     LT    3    :   4   12   17   22   34   24   23   16   22    11   10     9   12   13     7    2 :  238 19.

    TOTAL       :  18   27   44   58   84   87   97   74  154   295   99    55   46   59    45   13 : 1255

    PERCENT     :   1.   2.   4.   5.   7.   7.   8.   6.  12.   24.   8.    4.   4.   5.    4.   1. :      100.
                 ..........................................................................................................

                              TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        14(   1.12 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                            C-B SHALF OIL PROJECT
                                LEVEL = 30 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - D
                                                                     WIND DIRECTION
                          N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED         12.    9.    8.    7.    7.    7.    8.   17.   26.   22.   18.   18.   11.   13.   12.    8.
     MPH


    GT    24    :                                                     2                                            :     2  0.

  18 -    24    :                                                    48    46     4     1                          :    99  2.

  12 -    18    :     1                                        35   204   364    36     2           6     2        :   650 16.

   7 -    12    :     6     1     2     3     1     2    12    81   215   295    73    13     9    67    33     6 :   820 20.

   3 -     7    :    21    32    32    82   155   249   279   183   174   283   144    60   100   132    29    85 :  2040 50.

    LT     3    :    11    13    12    22    34    34    35    48    56    59    54    18    30    15     5    47 :   493 12.

   TOTAL        :    39    46    46   107   190   285   326   347   700  1047   311    94   139   220    69   138 :  4104

  PERCENT       :    1.    1.    1.    3.    5.    7.    8.    8.   17.   26.    8.    2.    3.    5.    2.    3. :       100.
                ...........................................................................................................

                             TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          32(   0.78 %)
```

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STABILITY WIND ROSE DIAGRAM

C-B SHALE OIL PROJECT
LEVEL = 30 FEET PERIOD(1/ 1/77 TO 1/31/77)

STABILITY CLASS - E

			WIND DIRECTION																
			N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		TOTAL	X
GROUP MAX SPEED MPH			12.	4.	9.	6.	6.	6.	8.	14.	24.	19.	19.	6.	7.	12.	12.	9.			
GT	24	:									1								:	1	0.
18. -	24	:									6	2	1						:	9	1.
12 -	18	:	1							4	33	20	3			1	1		:	63	6.
7 -	12	:	2		1				9	44	35	43	9		2	15	3	3	:	166	15.
3 -	7	:	21	8	7	27	46	100	90	120	51	97	47	18	34	24	5	37	:	732	66.
LT	3	:	5	2	2	1	4	6	9	19	15	16	18	4	3	1	0	29	:	134	12.
TOTAL		:	29	10	10	28	50	106	108	187	141	178	78	22	39	41	9	69	:	1105	
PERCENT		:	3.	1.	1.	3.	5.	10.	10.	17.	13.	16.	7.	2.	4.	4.	1.	6.	:		100.

TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE - 14(1.27 %)

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                                          STABILITY WIND ROSE DIAGRAM

                                             C-B SHALE OIL PROJECT
                                 LEVEL = 30 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - TOTAL
                                                                 WIND DIRECTION
                          N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED         15.    9.   10.    7.    7.    7.   12.   17.   26.   22.   19.   18.   14.   13.   12.   12.
     MPH


    GT    24     :                                                          3                                        :     3  0.

   18 -   24     :                                                         57    59     7     1                      :   124  2.

   12 -   18     :    4                                         1    40   260   487    53     4     3     7     3     1 :   863 11.

    7 -   12     :   19     3     4     3     1     2    27   147   316   447   137    37    27    99    47    18 :  1334 18.

    3 -    7     :   89    87    99   176   293   472   452   379   320   501   263   130   185   208    77   152 :  3913 51.

    LT     3     :   39    46    65   100   120   142   122   123   119   108   109    51    63    56    22    96 :  1383 18.

     TOTAL       :  151   136   168   279   414   516   532   689  1075  1602   569   223   278   370   149   267 :  7620

    PERCENT      :    2.    2.    2.    4.    5.    8.    8.    9.   14.   21.    7.    3.    4.    5.    2.    4. :       100.
                 ..........................................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          103(   1.35 %)


                                PERCENTAGE OF A      STABILITY -   9.87 %
                                PERCENTAGE OF B      STABILITY -   4.88 %
                                PERCENTAGE OF C      STABILITY -  16.47 %
                                PERCENTAGE OF D      STABILITY -  53.86 %
                                PERCENTAGE OF E      STABILITY -  14.50 %
```

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                               STABILITY WIND ROSE DIAGRAM

                                   C-B SHALE OIL PROJECT
                        LEVEL =100 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - A
                                                        WIND DIRECTION
                       N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED      13.   12.   4.   5.   5.   7.   8.   7.  14.  10.   8.   7.  10.   7.  12.  11.
    MPH


   GT   24     :                                                                                   :       0.

  18 -  24     :                                                                                   :       0.

  12 -  18     :      1     2                                                            1         :     4 0.

   7 -  12     :     11     6                    1    5    1    5    6    8    3    1    1    1    2 :    51 6.

   3 -   7     :     30    23   14    8   18   33   47   61   56   29   19   16    9    9    5   21 :   398 44.

   LT    3     :     17    13   28   21   37   54   66   58   55   32   18   13   12   13   11   13 :   461 50.

   TOTAL       :     59    44   42   29   55   88  118  120  115   67   45   32   22   23   18   36 :   914

   PERCENT     :      6.    5.   5.   3.   6.  10.  13.  13.  13.   7.   5.   4.   2.   3.   2.   4. :      100.
                 ...........................................................................................

                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        65(   7.11 %)
```

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                                         STABILITY WIND ROSE DIAGRAM

                                              C-B SHALE OIL PROJECT
                                 LEVEL =100 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - 6
                                                                   WIND DIRECTION
                          N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW   TOTAL  %
GROUP MAX SPEED         11.    6.    5.    5.    6.    6.    8.   11.   14.   12.   11.   11.   14.   10.    7.    4.
     MPH


    GT    24    :                                                                                                :          0.

  18 -    24    :                                                                                                :          0.

  12 -    18    :                                                    2     1                 1                   :       4  1.

   7 -    12    :     2                                   3     6   12     7     6     6     6     1     1        :      50 13.

   3 -     7    :     9     7    10    10    12    15    31    23    34    20    15    12     5    12     3     4 :     218 55.

   LT      3    :     7     4     5    10    10    11    19    14    13     6     5     5     5     6     3     1 :     124 31.

   TOTAL        :    18    11    15    20    22    26    53    43    57    34    26    23    17    19     7     5 :     396

   PERCENT      :    5.    3.    4.    5.    6.    7.   13.   11.   14.    9.    7.    6.    4.    5.    2.    1. :         100.
                  ..............................................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          14(   3.54 %)
```

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                                   STABILITY WIND ROSE DIAGRAM

                                       C-B SHALE OIL PROJECT
                        LEVEL =100 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - C
                                                      WIND DIRECTION
                      N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW  TOTAL  %
GROUP MAX SPEED      13.   5.   6.    5.   6.    6.   9.   16.  19.  23.  23.  14.  16.  13.  12.   9.
   MPH


   GT    24   :                                                                                   :          0.

  18 -   24   :                                                 1    29    5                      :     35   3.

  12 -   18   :    1                                       2   12    48   21    1     4     2    1     :     92   9.

   7 -   12   :    0                                 7    24   39    62   47   13    19    17    9    2 :    239  23.

   3 -    7   :    8   12   17   27   30   53   54   39   64    51   29   14    24    30   24   13 :    489  48.

  LT      3   :    2   16    8    6   19   15   14   18   14    20    8    7    11     7    7    0 :    172  17.

   TOTAL      :   11   28   25   33   49   68   75   83  130   210  110   35    58    56   41   15 :   1027

   PERCENT    :   1.   3.   2.   3.   5.   7.   7.   8.  13.   20.  11.   3.    6.    5.   4.   1. :        100.
              ........................................................................................................

                            TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -         14(   1.36 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                          C-B SHALE OIL PROJECT
                                 LEVEL =100 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - D
                                                          WIND DIRECTION
                         N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED        14.  11.  10.   7.   9.   9.  10.  19.  32.  25.  25.  22.  15.  15.  14.  13.
     MPH


     GT   24    :                                          17   10    1                                :   28  1.

   18 -   24    :                                      5   69  231   34    1                           :  340  9.

   12 -   18    :    4                                42  175  381   74    7    3    9   18    3 :  716 19.

    7 -   12    :    8    2    2    3    7   23   47  104  138  276  107   22    7   71   64    7 :  888 23.

    3 -    7    :   21   32   23   36   96  206  251  150  153  153   72   61   73  135   78   26 : 1566 41.

     LT    3    :    6    6   11   10   17   28   24   34   32   17   18    5   22   13   11   26 :  282  7.

      TOTAL     :   41   44   35   49  120  257  322  335  584 1068  306   96  105  228  171   62 : 3820

    PERCENT     :   1.   1.   1.   1.   3.   7.   8.   9.  15.  28.   8.   3.   3.   6.   4.   2. :     100.
                ......................................................................................................

                               TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE =        26(   0.68 %)
```

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                                 STABILITY WIND ROSE DIAGRAM

                                    C-B SHALE OIL PROJECT
                          LEVEL =100 FEET   PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - C
                                                        WIND DIRECTION
                     N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW   TOTAL  %
GROUP MAX SPEED     12.   6.  10.   4.   7.   9.  10.  20.  25.  24.  22.  11.   5.  16.  13.   9.
     MPH


   GT   24    :                                                1    1                                :     2  0.

  18 -  24    :                                          2   28   28    6                            :    64  5.

  12 -  18    :      2                                   9   69   71   13              1    2        :   167 12.

   7 -  12    :      7         1         1   17   30   71   55   86   33    5        19   17    2 :   344 26.

   3 -   7    :     15   18    8    4   56   82  139   79   49   36   30   29   22   58   19    5 :   649 48.

   LT    3    :      4    3    6    6   20   10   12    8   10    8    4    3    6    4    2   12 :   118  9.

   TOTAL      :     28   21   15   10   77  109  181  169  212  230   86   37   28   82   40   19 :  1344

   PERCENT    :      2.   2.   1.   1.   6.   6.  13.  13.  16.  17.   6.   3.   2.   6.   3.   1. :      100.
                 ..........................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          19(   1.41 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                           LEVEL =100 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - TOTAL
                                                            WIND DIRECTION
                      N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED     10.  12.  10.   7.   9.   9.  10.  20.  30.  25.  25.  22.  16.  16.  14.  13.
    MPH


     GT   24    :                                              18   11    1                         :   30  0.

   18 -   24    :                                         7    98  288   45    1                    :  439  6.

   12 -   18    :    8    2                              53   258  501  108    8    8   12   22    3 :  983 13.

    7 -   12    :   28    8    3    3    8   41   92  206   249  437  201   49   33  109   92   13 : 1572 21.

    3 -    7    :   83   92   72   85  212  389  522  352   352  289  165  132  133  244  129   69 : 3320 44.

     LT    3    :   38   44   59   55  105  120  138  132   125   85   56   36   59   47   37   53 : 1189 16.

     TOTAL      :  157  146  134  143  325  550  752  750  1100 1611  576  226  233  412  280  138 : 7533

     PERCENT    :   2.   2.   2.   2.   4.   7.  10.  10.   15.  21.   8.   3.   3.   5.   4.   2. :      100.
                .......................................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       138(   1.83 %)


                                PERCENTAGE OF A      STABILITY -  12.13 %
                                PERCENTAGE OF B      STABILITY -   5.26 %
                                PERCENTAGE OF C      STABILITY -  13.63 %
                                PERCENTAGE OF D      STABILITY -  50.71 %
                                PERCENTAGE OF E      STABILITY -  17.84 %
```

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```
                                        STABILITY WIND ROSE DIAGRAM

                                           C-B SHALE OIL PROJECT
                                LEVEL =240 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - A
                                                         WIND DIRECTION
                      N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL   %
GROUP MAX SPEED     14.    8.  11.   5.   4.   6.   7.   8.  10.  10.  10.   9.   6.  10.  11.  11.
    MPH


     GT   24   :                                                                                   :        0.

   18 -   24   :                                                                                   :        0.

   12 -   18   :      3                                                                            :     3  0.

    7 -   12   :      9    5    1                   1    5    9   10   11    4         2    1    3 :    60  8.

    3 -    7   :     28   16   18   12   12   12   19   49   85   46   19   18   13    7    7   11 :   373 48.

     LT    3   :     12   12   28   16   33   21   41   59   41   24   13    6    8   15    9    9 :   347 44.

      TOTAL    :     52   33   47   28   45   33   61  113  135   80   43   28   21   24   17   23 :   783

    PERCENT    :     7.   4.   6.   4.   6.   4.   8.  14.  17.  10.   5.   4.   3.   3.   2.   3. :      100.
                 ...........................................................................................

                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        50(   6.39 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                           C-B SHALE OIL PROJECT
                                 LEVEL =230 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - B
                                                          WIND DIRECTION
                        N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED       11.   5.   6.   5.   4.   6.   9.  12.  11.  11.  14.  10.  14.  11.   8.   6.
    MPH
                                                                                                  :        0.
   GT   24     :
                                                                                                  :        0.
  18 -  24     :
                                                                                                  :     3  1.
  12 -  18     :                                           1              1          1
                                                                                                  :    75 17.
   7 -  12     :    1                             1    5   17   22   16    5    2    5    1
   3 -   7     :   10    6    5   15    4    9   16   25   62   54   16    7    7   11    5    3  :   255 58.
   LT    3     :    4    4    6    5    9    6   12   13   16   10    4    2    1    9    3    1  :   105 24.
    TOTAL      :   15   10   11   20   13   15   29   44   95   86   37   14   11   25    9    4  :   438
   PERCENT     :   3.   2.   3.   5.   3.   3.   7.  10.  22.  20.   8.   3.   3.   6.   2.   1.  :      100.
                ...............................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -      17(   3.88 %)
```

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                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                          LEVEL =200 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - C
                                                      WIND DIRECTION
                    N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW   TOTAL  %
 GROUP MAX SPEED   6.   6.   8.   5.   7.   7.   7.  17.  20.  23.  22.  25.  14.  11.  10.  12.
     MPH

   GT   24   :                                                              1                     :     1  0.

  18 -  24   :                                               2   17    5    1                     :    25  2.

  12 -  18   :                                          7   11   37   16    2    3              1 :    77  7.

   7 -  12   :              1         1    1    2   22   41   88   49   30   23   22   16    1 :   297 26.

   3 -   7   :    7   11    9   23   18   23   25   53   87  121   37   26   14   24   36    9 :   523 47.

   LT    3   :    2    4   10    9   12   16   24   26   28   21    9    8    8   13    5    6 :   201 18.

    TOTAL    :    9   15   20   32   31   40   51  108  169  284  116   68   48   59   57   17 :  1124

   PERCENT   :   1.   1.   2.   3.   3.   4.   5.  10.  15.  25.  10.   6.   4.   5.   5.   2. :       100.
             ...........................................................................................

                   TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          14(   1.25 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                           C-B SHALE OIL PROJECT
                              LEVEL =210 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - D
                                                             WIND DIRECTION
                      N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW   TOTAL  %
GROUP MAX SPEED     15.   12.   10.    7.    7.    9.   10.   22.   31.   29.   27.   15.   16.   17.   16.   15.
    MPH


   GT   24    :                                                      23    56    13                                  :    92  2.

 18 -   24    :                                                 6    57   334   104                                  :   501 14.

 12 -   18    :       5     1                                  20   111   342   119     9     7    12    28     7 :   661 18.

  7 -   12    :       9     1     3     1     2     9    54    92    96   316   152    39    13    65    83    19 :   954 26.

  3 -    7    :      16    25    22    16    25    88   156   119   100   174    74    49    58   142    90    26 : 1182 32.

   LT    3    :       7    12    15     7     6    27    36    31    36    30    19    12    19    22    20    17 :   316  9.

   TOTAL      :      37    39    40    24    33   124   248   268   423  1252   481   109    97   241   221    69 : 3706

   PERCENT    :      1.    1.    1.    1.    1.    3.    7.    7.   11.   34.   13.    3.    3.    7.    6.    2. :     100.
                  ..........................................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -         45(   1.21 %)
```

```
                                     STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                              LEVEL =240 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

 STABILITY CLASS - E
                                                                  WIND DIRECTION
                          N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW   TOTAL   %
GROUP MAX SPEED         14.    5.   11.   10.    6.   10.   10.   19.   33.   27.   27.    9.   13.   15.   14.    9.
    MPH


   GT    24    :                                                     5    18     3                                    :    26  2.

  18 -   24    :                                               1    39   126    33                                    :   199 15.

  12 -   18    :      2                                        2    40   126    47           2     4     7              :   230 18.

   7 -   12    :      6           1     1           9    58    45    24   109    47     5     0    19    30     2      :   356 28.

   3 -    7    :      9     9     9     7    11    25    69    50    41    33    19    11    13    57    23    12      :   398 31.

   LT     3    :      1     2     3     5     7     8    16     0     9     7     4     4     3     4     5     3      :    90  7.

    TOTAL      :     20    11    13    13    18    42   143   107   156   419   153    20    18    84    65    17      :  1301

   PERCENT     :     2.    1.    1.    1.    1.    3.   11.    8.   12.   32.   12.    2.    1.    6.    5.    1.      :      100.
                    ..............................................................................................................

                              TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          20(   1.54 %)
```

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```
                                 STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                            LEVEL =200 FEET  PERIOD( 1/ 1/77 TO  1/31/77)

STABILITY CLASS - TOTAL
                                                      WIND DIRECTION
                     N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW  TOTAL  %
GROUP MAX SPEED     15.  12.  11.  10.    7.  10.  10.  22.   33.  29.  27.  25.  16.  17.  16.  15.
    MPH


    GT   24    :                                              28   74   16    1                        :  119  2.

   18 -  24    :                                         7    98  477  142    1                        :  725 10.

   12 -  18    :  10     1                               30  162  505  183   11   13   16   35    8 :  974 13.

    7 -  12    :  27     6     5     2     3    19  116  169  186  545  275   83   38  113  131   25 : 1744 24.

    3 -   7    :  70    67    64    73    70   157  287  296  376  426  165  111  105  241  161   61 : 2731 37.

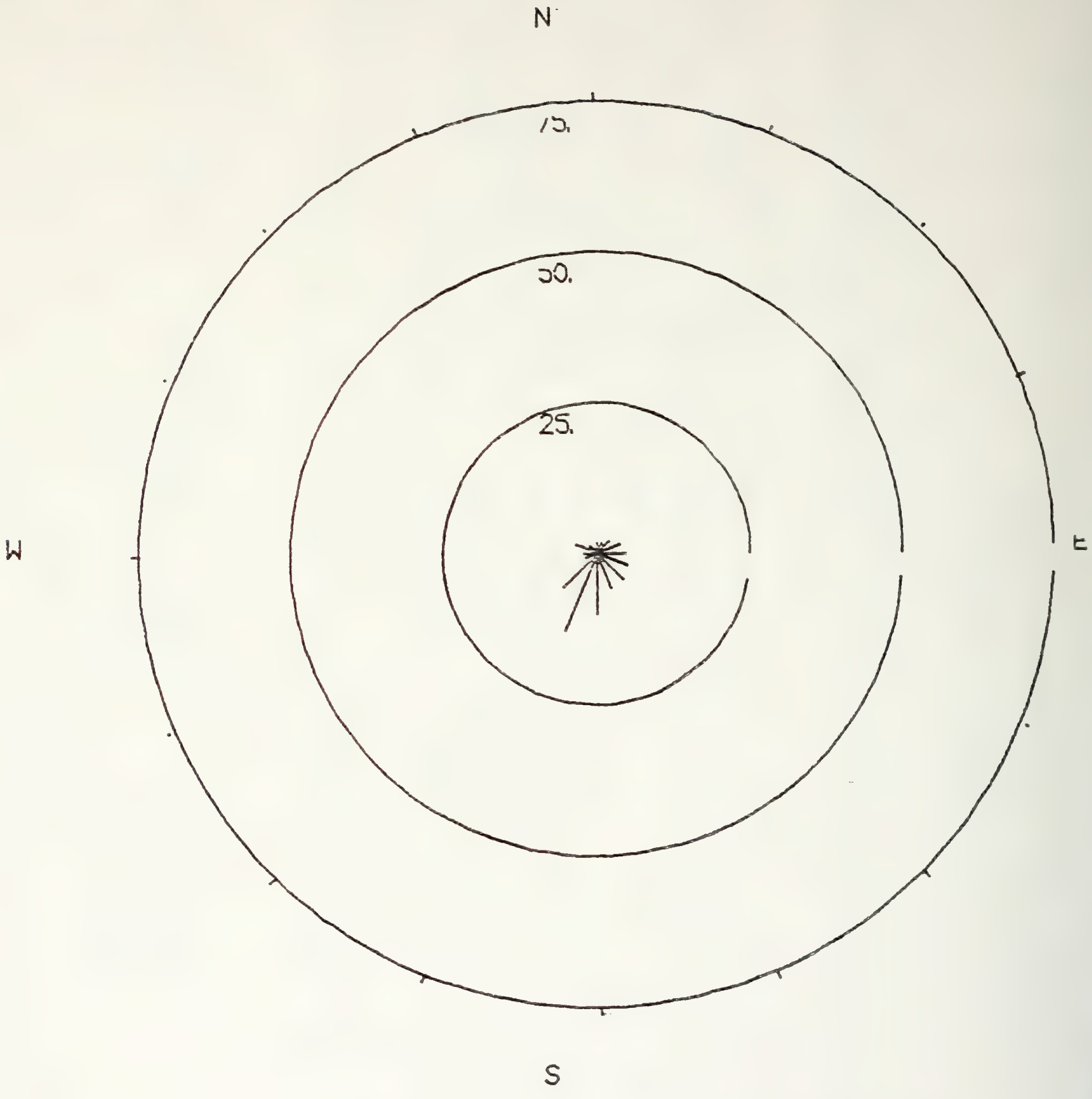
    LT    3    :  27    35    62    45    69    81  131  139  130   96   53   35   41   67   44   37 : 1092 15.

    TOTAL      : 134   109   131   120   142   257  534  641  980 2125  834  242  197  437  371  131 : 7385

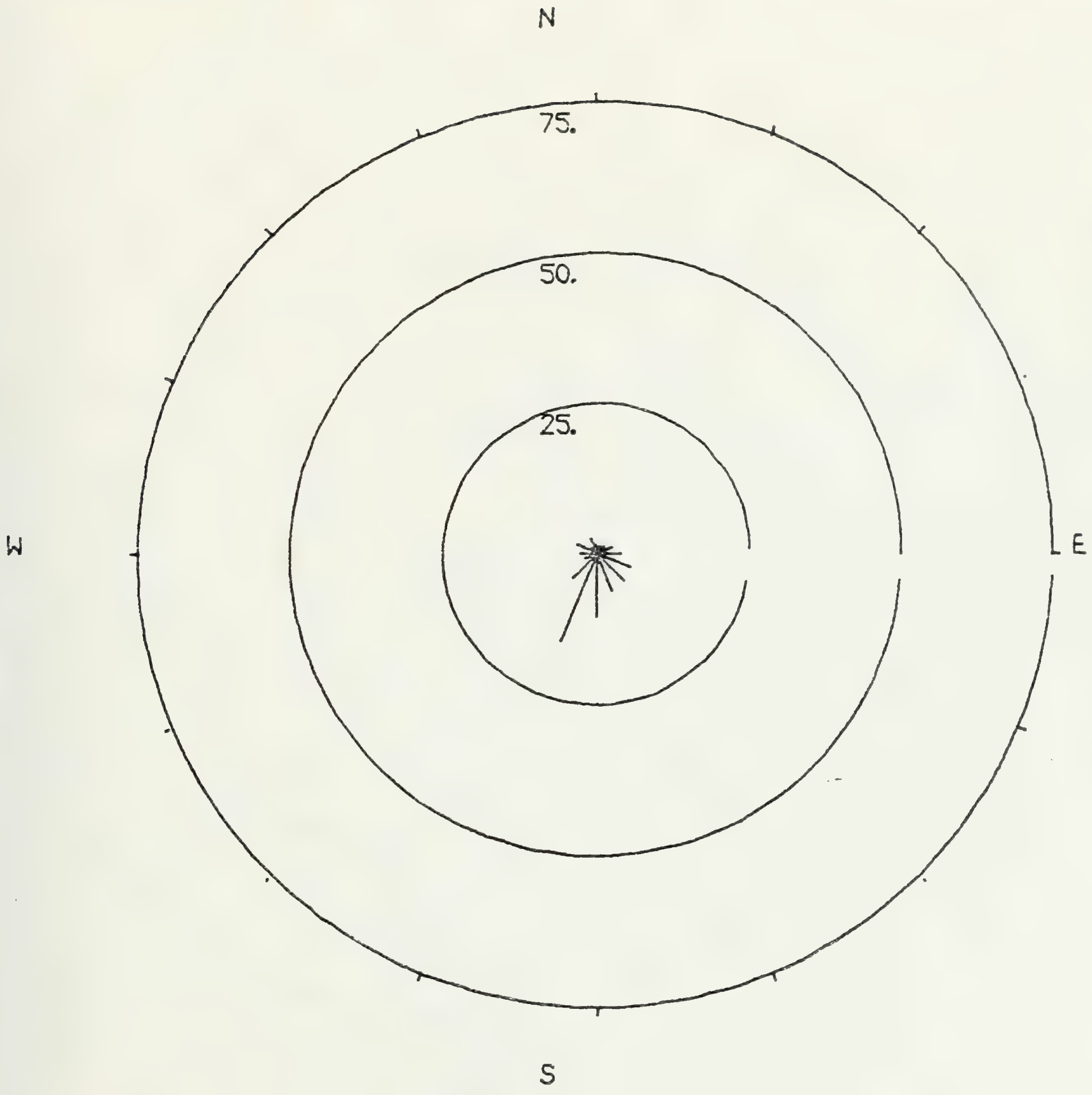
    PERCENT    :   2.    1.    2.    2.    2.    3.   7.   9.  13.  29.  11.   3.   3.   6.   5.   2. :      100.
              ..............................................................................................

                    TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       146(   1.98 %)

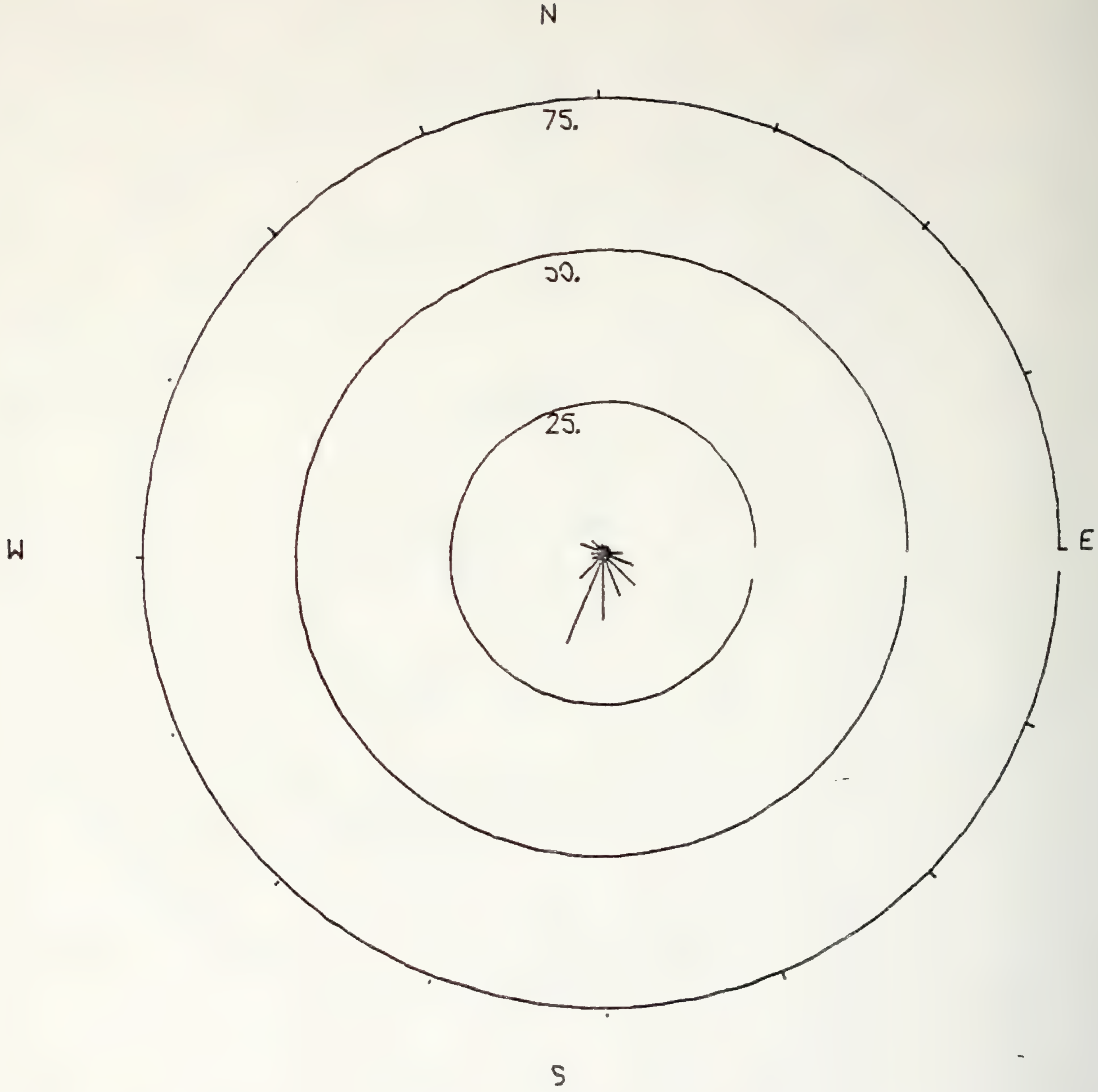

                          PERCENTAGE OF A      STABILITY -  10.60 %
                          PERCENTAGE OF B      STABILITY -   5.93 %
                          PERCENTAGE OF C      STABILITY -  15.22 %
                          PERCENTAGE OF D      STABILITY -  50.18 %
                          PERCENTAGE OF E      STABILITY -  17.62 %
```



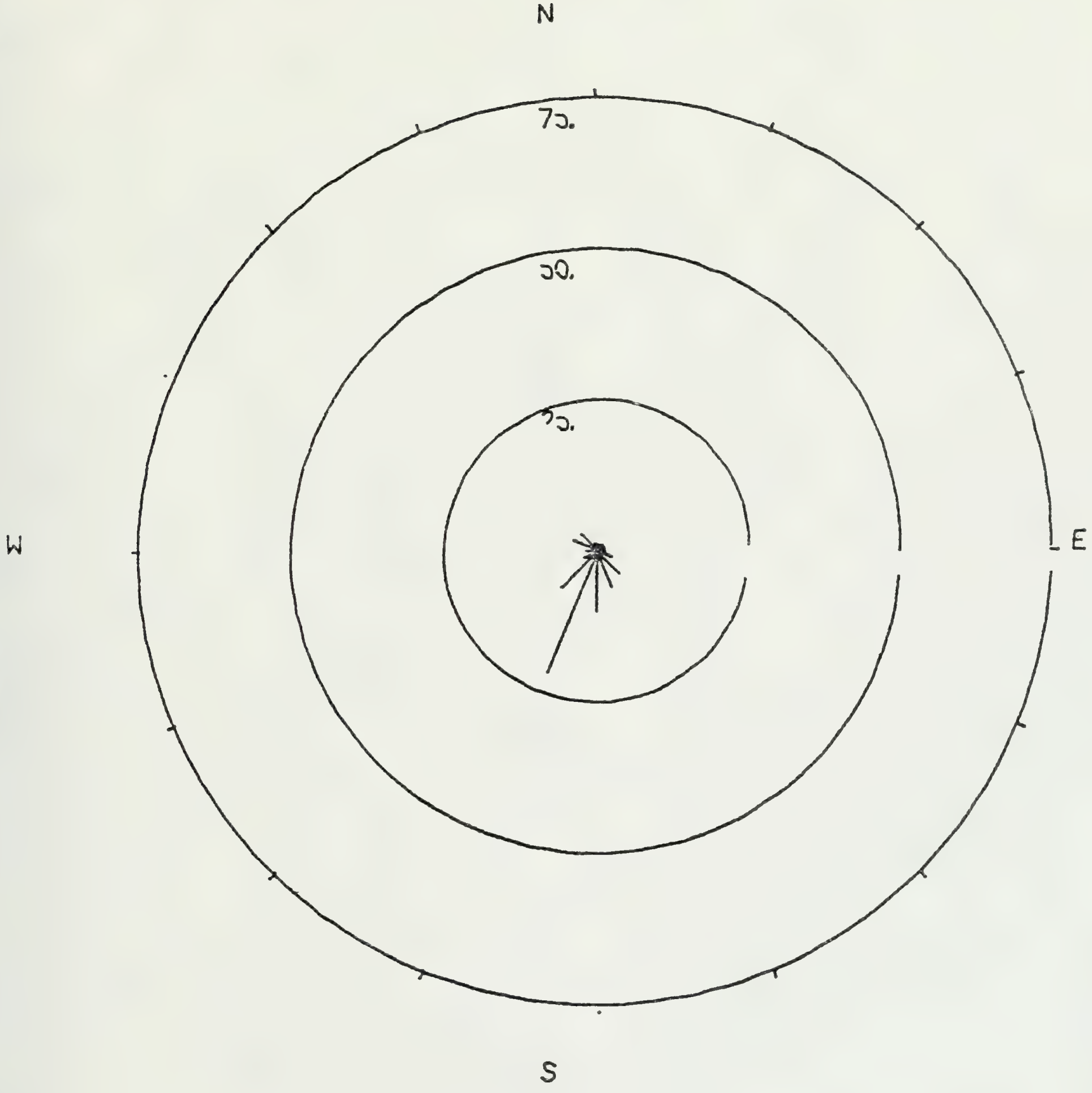
PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 8 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 30 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 100 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 200 FOOT LEVEL

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RADIAN REPORT -

CORPORATION
DCN 77-100-152-01

AIR MONITORING REPORT
FOR
C-b SHALE OIL PROJECT
FEBRUARY 1977
REPORT NO. 30

26 May 1977

Presented to:
C-b Shale Oil Project
United Bank Tower
Denver, Colorado 80202

Prepared by:
Radian Staff

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Pyranometer-- -923
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Nitrogen Dioxide----------------------------- -959
Sulfur Dioxide------------------------------- -960
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Total Hydrocarbons--------------------------- -962
Methane-------------------------------------- -963
Non-Methane Hydrocarbons--------------------- -964
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Wind Speed

8 feet--------------------------------- -968
30 feet-------------------------------- -969
100 feet------------------------------- -970
200 feet------------------------------- -971

Wind Direction

8 feet--------------------------------- -972
30 feet-------------------------------- -973
100 feet------------------------------- -974
200 feet------------------------------- -975

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8 feet-- II B-976
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200 feet-- -982

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8 feet-- -983
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100 feet-- -985
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Total Hydrocarbons--------------------------- -1009
Methane-------------------------------------- -1010
Non-Methane Hydrocarbons--------------------- -1011
Carbon Monoxide------------------------------ -1012
Ozone-- -1013
Hourly Total Precipitation------------------- -1014

Wind Speed
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- 100 feet---------------------------------- -1017
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- 8 feet---------------------------------- -1019
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8 feet-- II B-1023
30 feet-- -1024
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30 feet-- -1028
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200 feet-- -1030
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200 feet-- -1035
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Class C-------------- -1078
Class D-------------- -1079
Class E-------------- -1080
Class Total---------- -1081
100-foot level - Stability Class A-------------- -1082
Class B-------------- -1083
Class C-------------- -1084
Class D-------------- -1085
Class E-------------- -1086
Class Total---------- -1087
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I. GENERAL DESCRIPTION OF AIR MONITORING PROGRAM

Radian Corporation, under contract to the C-b Oil Shale Project, is performing the data compilation and reporting of air quality and meteorological data at one monitoring site in Northwest Colorado. The site measures and records concentrations of particulates, sulfur dioxide, oxides of nitrogen, hydrogen sulfide, total hydrocarbons, methane, and carbon monoxide. A 200-foot meteorological tower provides wind direction, wind speed, temperature, and relative humidity data at four levels (8, 30, 100, and 200 feet). Other meteorological variables measured at the tower site are insolation, barometric pressure, and precipitation.

Figure I shows the configuration of the monitoring station. The station provides a sturdy and protective covering for the monitoring equipment.

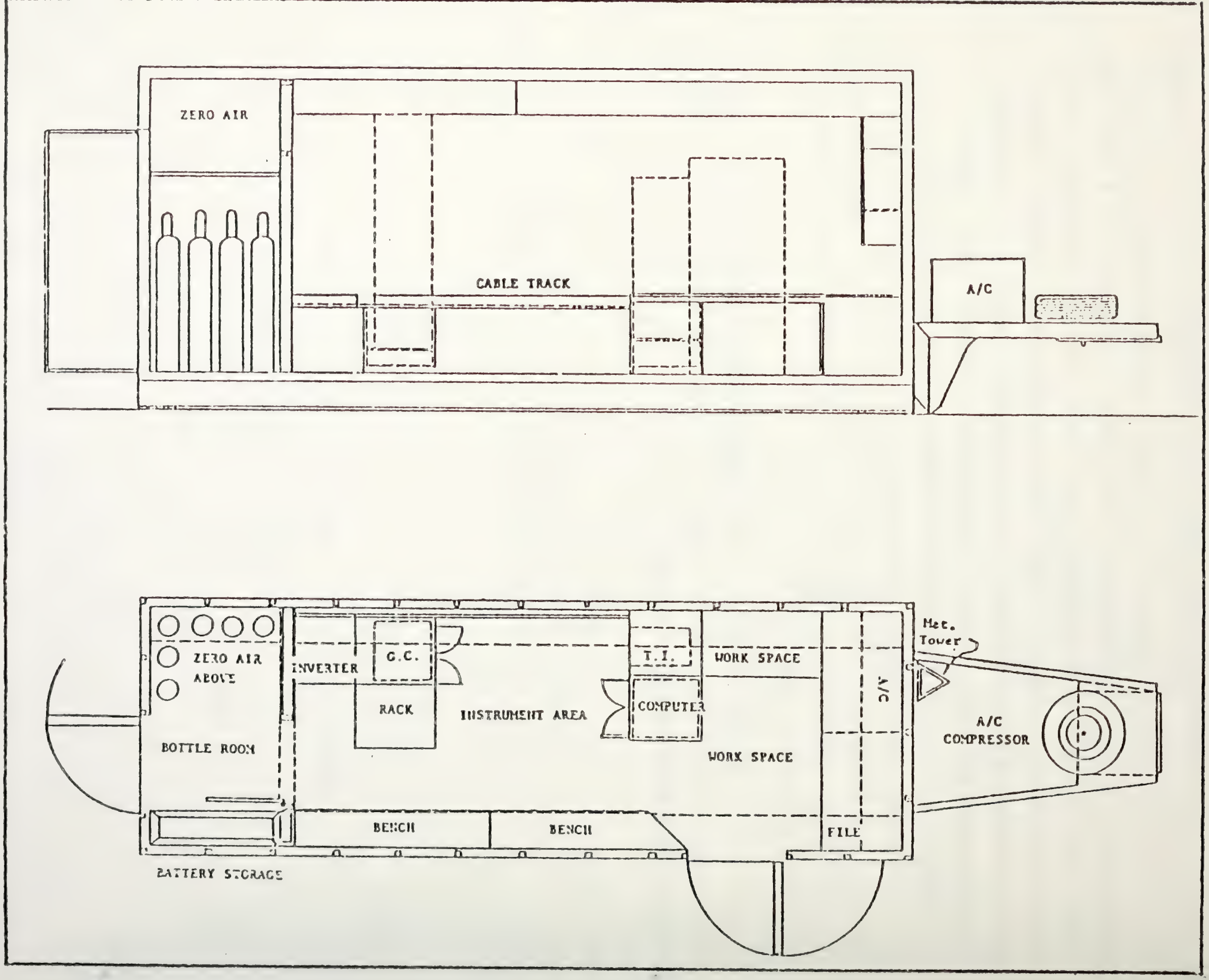
ZERO AIR
CABLE TRACK
A/C
ZERO AIR ABOVE
INVERTER
G.C.
RACK
INSTRUMENT AREA
T.I.
COMPUTER
WORK SPACE
WORK SPACE
A/C
Met. Tower
A/C COMPRESSOR
BOTTLE ROOM
BENCH
BENCH
FILE
BATTERY STORAGE

FIGURE I. CONFIGURATION OF MONITORING STATION

II. DESCRIPTION OF INSTRUMENT SYSTEMS

A. Air Quality Instrumentation

Nitrogen oxides are measured with a Meloy Model NA520 analyzer. This dual-channel analyzer is based on the chemiluminescent principle and continuously monitors both NO_x and NO. A subtraction circuit in the instrument provides a continuous NO_2 output, but is not used in Radian's system. NO_2 is calculated once a second by the computer by subtracting the NO value from the NO_x value, thus avoiding any drift which might occur in the NO_2 output of the instrument. This instrument has a minimum detectable sensitivity of 5 ppb (parts per billion) and a linearity of ±1%.

Both sulfur dioxide and hydrogen sulfide are measured with Meloy Model SA185 sulfur analyzers. The hydrogen sulfide analyzer uses a Meloy Model NO_x-1 sulfur dioxide scrubber and the sulfur dioxide analyzer uses a Meloy Model H_2S-1 hydrogen sulfide scrubber. The Model SA185 is a continuous analyzer and utilizes the flame photometric principle of operation. The minimum detectable sensitivity is 5 ppb and the linearity is ±1%.

Ozone is measured with a Meloy Model OA350 analyzer. This instrument, based on the chemiluminescent principle, provides continuous measurement of ozone. The minimum detectable sensitivity is 0.5 ppb and the linearity is ±1%.

Total hydrocarbons, methane, and carbon monoxide are monitored with a Bendix Model 8200 gas chromatograph analyzer. This instrument, which uses a plume ionization detector, has a minimum detectable sensitivity of 5 ppb for all three components. The Model 8200 works on a five-minute cycle, i.e., one air sample is analyzed every five minutes, and the results are displayed for five minutes via a sample and hold circuit.

The air sample is drawn in through a glass cane and manifold supplied by the Ace Glass Company. The system has a 25mm diameter, through which a constant air flow is provided by an air pump rated at 60 cfm at 0" head pressure. The manifold has sampling ports to which 1/4" teflon lines to the instrument are connected. All joints in the sampling system are secured by O-ring compression fittings. The manifold is contained in a heated (100°F) chamber to prevent condensation of moisture. The teflon lines from the manifold to the instruments are insulated with 1/8" wall thickness rubber tubing.

The trailer has four heavy duty high volume particulate samplers (Hi-Vols). Fiberglass filter paper is used for the collection of particulate samples, after which each filter is brought to a controlled humidity before weighing. Each Hi-Vol has a flow recorded to permit correction for changes in air flow as the filter becomes loaded with particulates. Each Hi-Vol runs for a 24-hour period (midnight to midnight) and is turned on and off by the computer. The Hi-Vols, which were manufactured by Radian, were designed following guidelines recommended by the Environmental Protection Agency.

In addition to the normal Hi-Vol particulate samples, a duplicate Hi-Vol sample is collected every sixth day on special filter paper for trace element analysis. Once each quarter these samples are composited and analyzed for gross radioactivity and trace element content.

B. Calibration Procedures

The trailer contains a Meloy Model RAD-1 calibration unit. This instrument provides a zero air supply, SO_2 span gas from an SO_2 permeation tube, and NO span gas obtained by precisely

The Model 8200 total hydrocarbon, methane, and carbon monoxide analyzer is calibrated with undiluted span gas obtained from AirCo's Rare and Specialty Gas Division. This span gas contains methane and carbon monoxide in air, the methane being used to calibrate both the total hydrocarbon channel and the methane channel. The Model 8200 is zeroes with air from a Bendix Model 8834 zero air unit. In addition, the instrument is electronically re-zeroed at the start of every five-minute cycle.

The Hi-Vol particulate samplers were calibrated using a Calibration Kit from General Metal Works.

C. Data Acquisition System

The basis of the data acquisition system is a Data General NOVA 1200 minicomputer. The NOVA, which has a basic cycle time of 1.2 μsec, is equipped with automatic program load and power fail/automatic restart features. The computer utilizes 16K 16-bit words of core memory. Analog-to-digital conversion is accomplished via an ADC built by Radian Corporation. The input/output unit for the system is Texas Instrument's KSR 733 keyboard/printer. This model teletype provides keyboard entry and hardcopy printed output. The data are also recorded on a cassette magnetic tape unit with three drives. The cassette unit is utilized for program storage and loading as well as for recording. To reduce wear on mechanical parts, the power to the teletype and cassette units is turned on only when the unit(s) is (are) to be used. Several important functions in the instruments as well as in the computer and the trailer are monitored by means of lights on a System Status Panel. These data lights are written onto cassette tape to monitor the complete status of the system every five minutes. The Data Acquisition System also monitors the presence of 100V power from the power lines. In its absence, the computer, which is powered by batteries, switches all trailer

systems to battery-provided power. If the line voltage is restored before the batteries are discharged to a specified level, the trailer system is switched back to line power.

D. Meteorological Instrumentation

200-Foot Meteorological Tower

The tower has instrumentation at four levels: 8 feet, 30 feet, 100 feet, and 200 feet. At all four levels, there are: wind speed, wind direction, and temperature and relative humidity sensors in a power-aspirated radiation shield. Temperature difference thermistors (also in power-aspirated radiation shields) and their associated circuitry take lapse rate measurements for the 30-foot to 100-foot layer and the 30-foot to 200-foot layer. In addition, this site has a Precision Spectral Pyranometer, a barometer, and a tipping bucket rain/snow gage.

The wind direction and speed apparatus used at each measurement level of the tower is the Model 1074-2 wind sensor by Meteorological Research, Inc. (MRI). This sensor has a 540° potentiometer for wind direction and a light chopper for wind speed. This sensor is rugged, with an all-weather coaxial cup and damped vane assembly. The prototype model has been in operation for years under the most demanding weather conditions, performing continuously with the utmost reliability. The wind sensors on the tower have been specially treated with a black paint which will promote warming of the exposed surfaces of the sensor and thereby reduce ice and snow accumulations on the moving parts of the apparatus. The specifications on the Model 1074-2 are as follows:

Wind Speed

- Starting Threshold: 0.75 mph.
- Response Distance: 18 feet (63% recovery).
- Flow Coefficient: 7.9 feet/Revolution.
- Accuracy: ±0.4 mph or 1% (whichever is greatest)

Wind Direction

- Starting Threshold: 0.75 mph.
- Delay Distance: 4 feet (50% recovery).
- Damping Ratio: 0.5 to 0.6.
- Accuracy (540° system): ±1%.
- Range: 0° to 540°.

The relative humidity and temperature sensors are mounted within a power-aspirated radiation shield at each tower level. All aspirators and sensors are of the Model 840 Series by MRI. The aspirated shielded housing is designed to provide maximum radiation protection to the sensor. Ambient air is drawn into the shield and across the sensors at approximately 15 feet per second. This intake air is essentially sampled from a hemispherical space which is approximately 3-inch radius from the tube opening. Speed of the incoming air at the perhiphery of this hemisphere is approximately 1 mph.

The temperature sensor is comprised of a dual thermistor and resistor network. This circuit provides a linear resistance change with an air temperature change. The relative humidity sensor is placed alongside the temperature elements inside the shield where it is exposed to a constant flow of air. Circulation to both sides of the sensing element produces accurate monitoring with a good response time. The specifications on the sensing elements are as follows:

Temperature

- Accuracy: ±0.25° C.
- Range: -50°C to +50° C.

Humidity

- Accuracy: ±3.0% RH.
- Range: 0% to 100% Relative Humidity.

Measurements of temperature difference are taken for two layers, the 30-foot to 100-foot and the 30-foot to 200-foot layer. The thermistors and circuitry used for these measurements are separate from the thermistors measuring air temperature. The use of separate thermistors and circuitry to measure ΔT allows for much greater accuracy and resolution in the measurements, which is necessary for stability assessments. Two ΔT thermistors are at the 30-foot level, one is at the 100-foot level, and one is at the 200-foot level. All of these ΔT thermistors are mounted within power-aspirated radiation shields. The specifications on the ΔT instrumentation are as follows:

- Accuracy: ±0.1°C.
- Range of ΔT Circuit (Lower Level-Upper Level): +9F° to -9F°.

All instrumentation, except at the ground level, is mounted at the end of 12-foot retractable booms. These booms are 3-inch box beams which are on rollers and can be retracted to the instrument platforms for instrument maintenance.

The meteorological tower itself is a 200-foot Rohn Model 80 Guyed Tower, designed for 40 pounds per square foot wind load with ½" of radial ice per EIA Standard RS-222-B, to

support four levels of meteorological equipment. The material consists of tower sections with a tapered base, three retractable booms 12-feet long, three outside work platforms, an inside ladder for climbing, two base ground kits and one anchor ground kit. The cable-type Safety Climbing Device consists of a cable and attachment mechanisms with a locking sleeve and safety belt. The tower is lighted and painted according to FAA specifications.

The signals from the tower instrumentation are fed from multiple signal cables into transmitters mounted at the base of the tower. After signals have been converted to analog signals, they are fed into a junction box, also at the tower base, where they are assimilated into one coaxial cable. The signals are then run underground within 3" PVC conduit to the A-to-D assembly, where they are processed. The transmitters are shielded and insulated from the elements. The signal cable is run underground in PVC conduit in order to minimize damage from the weather or from various rodents in the region.

The auxiliary equipment at the tower site consists of a heated tipping bucket rain/snow gage, an analog barometer, and a Precision Spectral Pyranometer. The rain/snow gage is the Model P511-E unit by Weather Measure. In the case of this gage, the durability and reliability of a tipping bucket gage are combined with heavy-duty electric heaters to make this an all-purpose precipitation sensor. This gage may be used to measure both snowfall and rainfall. An insulating cover of poly-vinyl chloride and a thermostatic control insure the proper gage temperature. The thermostatic control is adjustable from 0 to 35°C. Snow falling into the inlet funnel is melted. The resulting water (from rain or snow) drains into a precision tipping bucket mechanism which activates a mercury switch each time the bucket fills and tips. The gage is constructed of durable corrosion-resistant materials to provide many years of service. The

specifications for this gage are as follows:

- Orifice: 8 inches.
- Calibration: 0.01 inch.
- Accuracy: 0.5% (Calibrated at 0.5 in/hr).
- Sensor: Chrome-plated tipping buckets.
- Switch: Mercury, 0.1-second closure.
- Heat Control: Thermostat adjustment, 0 to 35°C.

The barometer is the B242 Analog Output Barometer by Weather Measure. This barometer provides an output voltage that is linearly proportional to pressure. The specifications on this instrument, which is mounted inside the monitoring trailer at the site, are as follows:

- Range: Specially designed for the 100 millibar interval from 725 millibars to 825 millibars.
- Resolution: Infinite.
- Linearity: ±0.5 millibar, over the 100 millibar interval.

The pyranometer at the site is the Eppley Precision Spectral Pyranometer. This instrument is used for the measurement of sun and sky radiation totally or in defined wavelength bands. The pyranometer is levelled and mounted atop a wooden stand 4½ feet from the ground surface. Care has been taken to eliminate the effects from all outside influences, such as reflection or shadows, on the pyranometer. The instrument characteristics are as follows:

- Sensitivity: 5 mv. per cal/cm°/min.
- Independence: 300 ohms.
- Temperature dependence: Sensitivity constant to within ±1 percent over the ambient temperature range from -20 to +40°C.

- Linearity: Response linear up to intensities of 4 $cal/cm^2/min$.
- Response time: 1 second (i/e signal).

All instrumentation is factory-calibrated and is field-calibrated at various intervals. Sling psychrometers are used to calibrate the humidity sensors; known temperatures and/or resistances are used to calibrate the thermistors; and an rpm calibrating unit is used to calibrate the anemometers. The wind direction instrumentation is aligned to true north (reference direction) by means of a surveyor's transit.

III. MICROMETEOROLOGICAL AND TERRAIN FEATURES

The Piceance Creek Valley and C-b Shale Oil Tract are situated such that many microscale meteorological phenomena affect the region where the ambient air monitoring unit is located. Trailer 023 and its associated 200-foot meteorological tower are located atop a plateau to the south of the valley, high enough to be affected mostly by gradient flow conditions.

The elevation at the meteorological tower site (Trailer 023) is 6940 feet above sea level. The largest gradients in elevation in this area, of course, occur at the Piceance Creek Valley walls. However, the northern valley walls are slightly steeper than those at the southern boundary of the valley, which then slopes upward gradually toward the C-b Tract. The Piceance Creek Valley decreases in elevation from east to west in this area, so that nighttime katabatic cold-air drainage flows advect from east to west.

Site 023 is approximately 2.5 miles south of the Piceance Creek Valley. This location is relatively high compared to its surroundings, with the nearest point having an elevation greater than 7000 feet being .5 miles to the south of the tower. The tower itself is on the top of a small knoll located between Scandard and Sorghum Gulches. Because of its location and the irregularities of the surrounding terrain, meteorological patterns are varied here.

Wind instrumentation is mounted at four levels of the meteorological tower: 8 feet, 30 feet, 100 feet, and 200 feet. The top level of the tower generally remains in gradient wind flow. That is, the winds at that level are normally generated

by synoptic-scale features and are usually separated from terrain features and micrometeorological circulations. Occasionally, a weak anabatic flow influence is experienced. However, such is not the case with the three lowest measurement levels. To varying degrees, these levels are influenced by both the katabatic and anabatic circulation cells. However, when strong pressure gradient forces exist in the region and the synoptic-scale wind flow is strong, all four tower levels will reflect a gradient wind flow as the winds increase in strength and height.

The terrain atop the plateau is generally barren and fairly rugged, with a few scattered small trees. The topsoil dries rapidly and is very fine, resulting in blowing dust when dry, windy conditions exist. In the Piceance Creek Valley, the terrain is fairly grassy and flat, with steep valley walls on either side. Surface winds are normally rather light in this valley unless channeling effects occur.

During clear nights with rather light pressure gradient-induced winds, rapid radiational cooling will occur in the region because of the barren nature of the terrain and the generally dry character of the air in this portion of the country. As a result, the diurnal range of temperatures will be extremely large. Because of the katabatic flow in the valley, nighttime temperatures will generally be lower in the valley than on the plateau. During the winter, especially, temperatures in the valley may be 20F° lower than they are on the plateau during the early morning hours.

IV. OPERATING TIME ANALYSIS FOR EACH SITE

This section presents the operating statistics for each of the major subsystems contained in the monitoring station. Table I shows the specific number of hours that each of these subsystems were inoperative for the month. The column labeled "DIGITIZING SYSTEM" indicates the entire data acquisition system; therefore, downtime hours appearing in this column means total loss of data. These instances include, in addition to computer downtime, power failures, no power available, and self-automated shutdown periods such as during air conditioner malfunctions.

Calibration time is not considered to be downtime and is, therefore, not included in the downtime figures. The amount of time used in calibrating the instruments is given at the bottom of the downtime analysis table and is reported as total calibration hours for each channel for the entire month. As is evident in the calibration figures, channels can be calibrated independently of one another. No calibration time is given for particulate monitoring since Hi-Vol calibration occurs infrequently and only during the off-duty cycle for each Hi-Vol while another Hi-Vol is taking data.

TABLE 1.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 025

DATE	DIGITIZING SYSTEM	NOX	NO	SO2	WS	WD	RH	TOUT	PYR	H2S	VOLT	THC	CH4	CO	O3	PRES	RAIN	PART
2/ 1	0.	10.	10.	0.	0.	0.	24.	0.	0.	0.	21.	0.	24.	0.	0.	0.	0.	0.
2/ 2	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	20.	0.	0.	0.	0.	0.	0.	0.
2/ 3	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	14.	9.	12.	0.	0.	0.	0.	0.
2/ 4	0.	0.	0.	12.	0.	0.	24.	0.	0.	0.	0.	2.	2.	0.	0.	0.	0.	24.
2/ 5	0.	0.	0.	13.	0.	0.	24.	0.	0.	0.	0.	9.	9.	0.	0.	0.	0.	0.
2/ 6	0.	0.	0.	12.	0.	0.	24.	0.	0.	0.	0.	13.	24.	0.	0.	0.	0.	0.
2/ 7	0.	0.	0.	2.	0.	0.	24.	0.	0.	0.	0.	15.	15.	2.	0.	0.	0.	0.
2/ 8	0.	0.	0.	2.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 9	1.	0.	0.	0.	0.	0.	23.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/10	1.	0.	0.	0.	0.	0.	23.	0.	0.	0.	0.	8.	9.	8.	0.	0.	0.	0.
2/11	0.	0.	0.	1.	0.	0.	24.	0.	0.	0.	0.	11.	11.	11.	0.	0.	0.	0.
2/12	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/13	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/14	0.	5.	5.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/15	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/16	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/17	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/18	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/19	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	8.	7.	0.	0.	0.	0.
2/20	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	24.	5.	0.	0.	0.	0.
2/21	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	12.	23.	23.	0.	0.	0.	0.
2/22	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	23.	23.	23.	0.	0.	0.	0.
2/23	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	15.	15.	22.	0.	0.	0.	0.
2/24	0.	0.	0.	0.	0.	0.	24.	0.	0.	10.	0.	0.	0.	24.	0.	0.	0.	0.
2/25	0.	0.	0.	0.	0.	0.	24.	0.	0.	9.	0.	2.	2.	24.	0.	0.	0.	0.
2/26	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	2.	2.	24.	0.	0.	0.	0.
2/27	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	1.	1.	24.	0.	0.	0.	0.
2/28	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	1.	1.	24.	0.	0.	0.	0.
CAL TIME		14.	14.	12.	0.	0.	0.	0.	0.	11.	0.	11.	11.	10.	10.	0.	0.	

RADIAN
CORPORATION

TABLE 1.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 023

DATE	DIGITIZING SYSTEM	WS1	WD1	RH1	TMP1	WS2	WD2	RH2	TMP2	WS3	WD3	RH3	TMP3	WS4	WD4	RH4	TMP4	DI1	DI2
2/ 1	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 2	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 3	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 4	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 5	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 6	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 7	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 8	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/ 9	1.	0.	0.	0.	0.	0.	0.	25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/10	1.	0.	0.	0.	0.	0.	0.	25.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/11	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/12	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/13	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/14	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/15	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/16	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/17	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/18	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/19	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/20	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/21	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/22	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/23	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/24	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/25	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/26	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/27	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2/28	0.	0.	0.	0.	0.	0.	0.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CAL TIME		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TABLE I.
DOWNTIME HOURS FOR C-B SHALE OIL PROJECT

SITE 023

DATE	BWS1	HWD1	VWD1	BWS2	HWD2	VWD2	BWS3	HWD3	VWD3	WSD1	WSD2	WSD3	WSD4	HSD1	VSD1	HSD2	VSD2	HSD3	VSD3
2/ 1	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.	0.	1.	0.	1.	0.
2/ 2	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	2.	2.	2.	0.	0.	0.	1.	0.
2/ 3	0.	0.	0.	0.	0.	0.	0.	0.	1.	10.	10.	10.	10.	10.	0.	11.	0.	11.	0.
2/ 4	0.	0.	0.	0.	0.	0.	0.	0.	1.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/ 5	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/ 6	0.	0.	0.	0.	0.	0.	0.	0.	1.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/ 7	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/ 8	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/ 9	0.	0.	0.	0.	0.	0.	0.	0.	0.	23.	23.	23.	23.	23.	0.	23.	0.	23.	0.
2/10	0.	0.	0.	0.	0.	0.	0.	0.	0.	23.	23.	23.	23.	23.	0.	23.	0.	23.	0.
2/11	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/12	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/13	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/14	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/15	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/16	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/17	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/18	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/19	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/20	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/21	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/22	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/23	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/24	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/25	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/26	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/27	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
2/28	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	24.	24.	24.	24.	0.	24.	0.	24.	0.
CAL TIME	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

V. MONTHLY METEOROLOGICAL SUMMARY

A. Summary of the Meteorological Conditions over North America during February 1977

February 1977 brought above normal temperatures to the western and Rocky Mountain sections of the United States. In addition, the northern and central Plains regions experienced above normal and slightly above normal temperatures, respectively. All other sections of the country experienced normal or below normal monthly average temperatures. Monthly precipitation totals were, at best, slightly below normal in all sections of the country. The long wave circulatory pattern for February featured a mean ridge in the western United States and a long wave trough in the eastern United States. This pattern accounted for the above normal temperatures in the western sections of the country and below normal temperatures in eastern sections of the country. The northern location of the storm tracks and polar front jet stream accounted for the below normal precipitation over most sections of the United States.

The long wave circulation was meridional (north-south) from the 6th through the 8th, from the 12th through the 21st, and on the 27th and 28th. Split flow occurred from the 1st through the 5th, from the 9th through the 11th, and from the 22nd through the 26th.

Extratropical low pressure systems were frequent in the United States during February because of the strength of the polar front jet stream. (The polar front jet stream is normally well developed during February.) Numerous low pressure systems developed during the month, affecting primarily the Great Lakes area. The dates and locations of these low pressure systems are as follows:

2nd - 3rd:	Northern Great Lakes
4th:	Great Lakes
5th:	Atlantic Seaboard
10th:	Pacific Northwest
12th:	Northern Great Lakes
13th:	Great Lakes
14th:	New England
18th:	Northern Great Lakes
20th - 21st:	New England
22nd - 23rd:	Great Lakes
26th:	Mississippi Valley
27th:	Great Lakes
28th:	New England

On a sectional basis, the following temperature and precipitation anomalies existed during February.

Section	Temperature	Precipitation
Northeast	Near normal	Slightly below normal
Atlantic Seaboard	Near normal	Much below normal
North Central	Above normal	Below normal
Central	Slightly above normal	Slightly below normal
Southeast	Slightly below normal	Below normal
Southwest	Near normal	Variable; mostly slightly below normal
Rockies	Much above normal	Much below normal
West and Pacific Northwest	Above normal	Much below normal

B. Summary of the Meteorological Conditions in Northwestern and West Central Colorado During February 1977

Grand Junction, Colorado, sixty miles to the south-southwest of the Tract C-b, received a total of 0.06 inch of precipitation during February, which is 0.55 inch below the monthly normal of 0.61 inch. Grand Junction received only a trace of snow during February. Measurable precipitation occurred only on the 22nd. The region received 91 percent of the possible monthly sunshine. Sky cover by cloudiness averaged 5.0 out of a possible 10 during the daylight hours and 4.2 out of a possible 10 during the entire month. The region had nine clear days, eight partly cloudy days, and eleven cloudy days during the month.

Five frontal passages occurred during February. These frontal passages occurred during the latter half of the month as a long wave ridge dominated the western sections of the country. Temperatures in the Tract C-b were cool due to seasonal influences. Transport winds were stronger in February than in January. Maritime polar cold frontal passages occurred on the 11th, 13th, 22nd, and 24th. A weak continental polar cold frontal passage occurred on the 26th.

C. Summary of the Meteorological Conditions in the Oil Shale Tract C-b Region during February 1977

An upper-level ridge which had a mean position over the western United States was responsible for the below normal precipitation totals which occurred in the Tract C-b region during February. Precipitation occurred on the 22nd and 26th of February. Some minor troughing in the western United States was responsible for the precipitation. Temperatures in the Tract C-b region were above normal during February since most of the extremely cold continental polar air masses were directed toward the eastern half of the United States during the month.

Five frontal passages occurred during February. Maritime polar cold frontal passages occurred on the 11th, 13th, 22nd, and 24th. A weak continental polar cold frontal passage occurred on the 26th.

The monthly average temperatures recorded at the meteorological tower during February were: 29.2°F at 8 feet; 28.9°F at 30 feet; 29.3°F at 100 feet; and 27.0°F at 200 feet. These averages are approximately 6F° higher than those recorded in January. The warmest days of the month were the 16th through the 21st. The coolest days were the 25th through the 27th. The highest temperature recorded at the meteorological tower during February was 55°F at the 8-foot level on the 20th. The coldest temperature recorded at the meteorological tower was 6°F at the 8-foot level on the morning of the 26th.

Monthly average relative humidities during February were lower than they had been in January in the Tract C-b region. This decrease can be attributed to an increase in monthly average temperatures. At the meteorological tower, the monthly average relative humidities were: 64.3 percent at 8 feet; 69.9 percent at 100 feet; and 66.0 percent at 200 feet. These relative humidities correspond to dew points of 18.5°F, 20.5°F, and 18°F, respectively. The relative humidity sensor at the 30-foot level was inoperative for most of the month. The most humid days of the month were the 2nd, 22nd, 25th, and 26th. The driest days were the 8th, 9th, 10th, 17th, 18th, 20th, and 21st.

Wind speeds on the meteorological tower during February were approximately the same on the average as the winds that prevailed during January. Resultant wind vectors at the meteorological tower during February were: 254.8 degrees at 1.3 miles per hour at 8 feet; 251.3 degrees at 1.9 miles per hour at 30 feet; 259.1 degrees at 2.2 miles per hour at 100 feet; and 262.0 degrees at 2.9 miles per hour at 200 feet.

The scalar average wind speeds associated with these resultant wind vectors were 3, 5, 6, and 7 miles per hour, respectively. The Ekman spiral and Ekman effect, i.e., a veering in direction and increase in speed as a function of increasing height above the surface, were in evidence during most of February. A reference to the February wind roses for the meteorological tower indicates that the winds at that location were primarily west-northwesterly at all four levels.

The windiest days of the month at the meteorological tower were the 21st through the 25th and the 28th. The days having the lightest winds were the 3rd, 5th, 6th, 7th, and 10th. The highest five-minute average wind speed recorded at the tower during February was 38 miles per hour at the 200-foot level on the 21st.

Precipitation totals in the Tract C-b Monitoring Network during February were generally very much below normal.

Only 0.04 inch of precipitation was recorded at the meteorological tower during February. The largest daily precipitation total recorded in the network during February was 0.03 inch on February 22nd. The greatest five-minute precipitation total recorded during the month was 0.01 inch (a precipitation rate of 0.12 inch/hour), recorded on the 22nd and 26th. Measurable precipitation (≥.01 inch) was recorded at the meteorological tower on the 22nd and 26th. The precipitation was in the form of snow.

The monthly average station pressure during February was 790.6 millibars at the meteorological tower. This reading is 2.5 millibars higher than the January average station pressure of 788.1 millibars. The highest daily average station pressures occurred on the 7th, 12th, and 19th. The lowest daily average station pressures occurred from the 21st through the 25th.

Cloudiness decreased in the Tract C-b region during February, compared to the January cloud cover and insolation statistics. The region received an insolation total of 7844.1 langleys, which is equivalent to a daily average insolation total of 280 langleys/day. This average is slightly below the normal for February of 300 langleys/day in the Tract C-b region. On a diurnal basis, the greatest solar radiation rates occurred between 1100 and 1300 hours. The greatest daily radiation totals were received on the 19th, 20th, 23rd, 27th, and 28th. The lowest daily solar radiation totals were received on the 1st, 2nd, and 22nd. The greatest five-minute radiation total received during January was 6.60 langleys (a rate of 1.32 langleys/minute), which occurred on the 27th. The largest hourly insolation total received during February was 63 langleys, which occurred on the 27th between 1100 and 1200 hours.

Because of the progressively increasing solar elevations and the increasingly longer periods of daylight that prevailed during February, the total possible solar radiation which could be received during a day increased monotonically throughout the month.

The increase in insolation which affected the Tract C-b during February caused the "very unstable" stability classes to become more common than they had been in January. Using the Pasquill method of stability determination, "D" stability (neutral stability) was the most common stability, occurring during 87 daytime hours, or 42.4 percent of the time. In decreasing order of frequency, "C" (slightly unstable) stability occurred during 76 hours, or 37.1 percent of the time, and "B" (very unstable) stability occurred during 41 hours, or 20.0 percent of the time. "A" (extremely unstable) stability occurred during only one daytime hour.

Using the lapse rate method of stability determination $\left(\frac{dT}{dZ}\right)$, the very unstable ("B"), slightly stable ("E"), and extremely stable ("F") stability classes were the most prevalent during February. In general, stable and/or neutral conditions prevailed during the nighttime hours and unstable and/or neutral conditions prevailed during the day. The following table is a diurnal breakdown of the various stability classes. As one proceeds from "A" to "F", the stability class ranges from extremely unstable to extremely stable. The column labeled "number of occurrences" indicates the number of times a particular stability class occurred during the month on an hourly basis. Level I presents the temperature change versus height values $\left(\frac{dT}{dZ}\right)$ that were considered between 30 feet and 100 feet. Level II indicates the values that were considered between 30 feet and 200 feet.

Using the standard deviation of the horizontal wind (σ_Θ) method of stability determination, "D" stability was the most common stability classification at the meteorological tower because of the moderately strong winds that normally occurred at that location. The stability distributions for the 30-, 100-, and 200-foot levels were similar. The 8-foot level of the tower exhibited higher percentages of the unstable classes because of excessive mechanical turbulence.

The bivanes at the 30-, 100-, and 200-foot levels of the meteorological tower indicated a pattern of upward vertical motion (negative vertical directions) during February. Upward vertical motion was more pronounced during the nighttime hours at the 100-foot level during February (probably because of lower wind speeds), but this diurnal pattern was reversed (i.e., upward motions were less pronounced) at the 200-foot tower level. At the 30-foot level, downward vertical motions were greatest during the daytime hours, a result which is quite unusual considering the proximity of the sensing level to the ground. Upward vertical motions were greatest during nighttime and early morning hours.

The σ_Θ values obtained at the 30-, 100-, and 200-foot levels using the bivanes compared favorably with the σ_Θ values obtained at those levels using the standard wind instrumentation. However, σ_Θ values were obtained only for the first three days of February.

LEVEL I $(\frac{dT}{dZ})$ 30 feet to 100 feet

Stability Class /Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Occurrences
A:	0	0	0	0	0	0	0	0	1	4	15	10	8	5	4	2	0	0	0	0	0	0	0	0	49
B:	0	0	0	0	0	0	0	0	1	9	9	15	17	18	19	18	19	0	0	0	0	0	0	0	125
C:	0	0	0	0	0	0	0	0	2	1	1	2	3	3	4	6	6	0	0	0	0	0	0	0	28
D:	5	3	3	3	4	4	4	3	3	9	2	1	0	2	1	2	3	24	8	5	4	3	2	3	101
E:	5	6	2	5	2	4	3	5	6	3	1	0	0	0	0	0	0	4	14	9	11	9	5	6	100
F:	18	19	23	20	22	20	21	20	15	2	0	0	0	0	0	0	0	0	6	14	13	16	21	19	269

A: extremely unstable
B: very unstable
C: slightly unstable
D: neutral
E: slightly stable
F: extremely stable

LEVEL II $(\frac{dT}{dZ})$ 30 feet to 200 feet

Stability Class /Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	No. of Occurrences
A:	2	0	0	0	0	2	4	2	5	11	19	19	9	5	4	3	1	4	2	1	1	1	0	1	87
B:	1	4	5	4	3	3	1	2	3	6	7	17	16	18	19	18	22	18	6	3	3	3	2	2	186
C:	2	0	0	0	2	1	1	2	3	3	2	0	3	3	4	5	3	4	5	2	0	1	2	1	49
D:	3	5	4	3	1	0	0	3	0	5	0	1	0	2	1	2	2	2	8	10	11	8	6	4	81
E:	15	12	10	16	13	10	14	6	10	2	0	0	0	0	0	0	0	0	6	9	9	12	17	16	177
F:	5	7	9	5	9	12	8	13	7	1	0	0	0	0	0	0	0	0	1	3	4	3	1	4	92

VI. DATA PRESENTATION AND SUMMARY

This section includes summaries for various recorded data at the monitoring sites. The data presentations indicate the variability of pollutant concentrations and meteorological parameters with location and time. In addition, the presentations indicate the functional dependence of pollutant concentration with wind direction. All data except suspended particulates (24-hour samples) are sampled once each second, but recorded as five-minute arithmetic averages of the one-second samples. This averaging technique tends to smooth instantaneous maximum values, and is especially evident when comparing wind gusts to local weather bureau data.

Inherent to any data acquisition system is random noise both from the recording instruments and quantization in the analog-to-digital conversion. The lower threshold for all analytical instruments is twice the maximum noise level generated by the instruments. This lower threshold is 5 ppb for all instruments, except for the ozone analyzer, for which it is 0.5 ppb. Therefore, any values appearing in the data presentations that are less than 5 ppb indicate only a trace of pollutant in question and should not be construed to be absolute levels. In addition, the recorded quantity is simply random noise and averages tend toward zero. Thus, when concentrations are below the lower threshold of the analytical instruments they may appear as a zero entry in the data presentation which does not indicate absolute zero concentration.

All pollutant data (except for particulate data) is taken at the monitoring site in integer parts per billion (ppb) but is presented here in micrograms per cubic meter ($\mu g/m^3$)

assuming standard temperature and pressure of 25°C and 760 mmHg (1013.2 millibars), respectively. The scale factors required to convert μg/m³ at standard conditions back to ppb for the various pollutants are given in the following table.

POLLUTANT	TO CONVERT μg/m³ AT 25°C AND 760 mmHg TO ppb MULTIPLY BY
NO_x	.534
NO	.534
NO_2	.534
SO_2	.384
H_2S	.723
THC	1.536
CH_4	1.536
CO	.877
O_3	.512

The units of the meteorological parameters are given in the table. It should be noted here that inside temperature is monitored and recorded as a functional part of the system but is not presented in this report.

Table III displays the monthly statistics for each monitoring station for the month. To insure statistical significance, and to reduce the possibility of introducing a bias in the presentation, averages are computed only when at least 50 percent of the samples are present, except for relative humidity and temperature, in which case 75 percent of the samples are required. If less than the required samples are present for a particular parameter, that entry will be blank. The number of

samples present for a particular channel is defined as the total possible number of five-minute samples for the averaging time less the computer downtime less the channel downtime less the channel calibration time. The averages in Table III are arithmetic averages with the following exceptions:

- Wind speed and wind direction are computed using a vector averaging technique where the wind speed is treated as the vector magnitude.
- Particulate averages are computed as the geometric mean.

Table IV displays the daily averages. Again, 50 percent of the five-minute samples are required in order to compute an average except for the cases of relative humidity and temperature which require 75 percent. A blank entry indicates an insufficient number of five-minute samples present for that day. Wind speed, wind direction, and particulate averages are computed the same way as described in Table III.

Table V presents the maximum daily five-minute average retained in the data base as well as the time of occurrence. A five-minute maximum average is printed if any samples are present for that day. Therefore, the maximum five-minute average for a channel which experienced considerable downtime or calibration time during the day in question may be misrepresentative of the maximum expected for that channel on that day.

Table VI indicates the five largest averages for various averaging times. The table shows the period of time covered by the average. Maxima are chosen so that time segments

are independent. The maximum averages reported are found using a 'sliding average' technique with the exception of the 24-hour particulate average, which is computed from midnight to midnight. For averaging times less than or equal to three hours, the sliding average is stepped one five-minute sample at a time. For longer averaging times the step size is twelve samples or one hour. For averaging times less than or equal to one hour 100 percent of the five-minute samples must be present to compute an average. Averaging times greater than one hour require 90 percent. Whether or not a sliding average is computed is solely determined by the number of samples present in that averaging time and is independent of daily and monthly averaging criteria.

To demonstrate the functional dependence of recorded parameters upon wind direction, Table VII shows pollutant concentration displayed in a bi-variate distribution with wind direction. The tables display the total number of five-minute samples occurring in each concentration and wind speed class. The mean concentration for all samples occurring in each wind class are also shown. This distribution demonstrates the dependence of high pollutant concentrations upon wind direction. Appendix A shows the stability wind rose diagrams.

The wind speed classifications used in Appendix A are based on the Beaufort wind scale classification system. This is a system of estimating and reporting wind speeds, invented in the early nineteenth century by Admiral Beaufort of the British Navy. It was originally based on the effects of various wind speeds on the amount of canvas that a full-rigged frigate of the period could carry, but has since been modified and modernized. In its present form for international meteorological use it equates: (a) Beaufort force (or Beaufort number); (b) wind speed;

(c) descriptive terms; and (d) visible effects upon land objects or the sea surface. One land adaptation is the NRM wind scale.

The six basic wind speed classifications used in the report are: 1-3 knots, 4-6 knots, 7-10 knots, 11-16 knots, 17-21 knots, and winds of greater than 21 knots. The following table is a complete description of the Beaufort Wind Scale, taken from Physical Climatology, by Helmut Landsberg, 1969.

BEAUFORT WIND SCALE FOR OBSERVATIONS AT LAND STATIONS

Force	Explanatory Title	Specification for Use	Corresponding Limits of Wind Speed at 10 meters ab.grd.				
			Mi/hr.	Knots	Km/hr.	M/sec.	Ft/sec.
0	Calm............	Smoke rises vertically....................	<1	<1	<1	0.3	1
1	Light air........	Direction of wind shown by smoke drift, but not by wind vanes..................	1-3	1-3	1-5	0.3-1.5	1-5
2	Light breeze.....	Wind felt on face:leaves rustle:ordinary vane moved by wind.....................	4-7	4-6	6-11	1.6-3.3	6-11
3	Gentle breeze....	Leaves and small twigs in constant motion;wind extends light flat...........	8-12	7-10	12-19	3.4-5.4	12-18
4	Moderate breeze..	Raises dust and loose paper:small branches are moved.........................	13-18	11-16	20-28	5.5-7.9	19-26
5	Fresh breeze.....	Small trees in leaf begin to sway:wavelets formed on inland waters...........	19-24	17-21	29-38	8.0-10.7	27-35
6	Strong breeze....	Large branches in motion:whistling heard in telegraph wires:umbrellas used with difficulty............................	25-31	22-27	39-49	10.8-13.8	36-45
7	High wind........	Whole trees in motion:inconvenience felt when walking against wind..............	32-38	28-33	50-61	13.9-17.1	46-56
8	Fresh gale.......	Breaks twigs off trees:generally impedes progress............................	39-46	34-40	62-74	17.2-20.7	57-68
9	Strong gale......	Slight structural damage occurs (chimney pots and slates removed)...............	47-54	41-47	75-88	20.8-24.4	69-80
10	Whole gale.......	Seldom experienced inland:trees uprooted: considerable structural damage occurs...	55-63	48-55	89-102	24.5-28.4	81-93
11	Storm............	Very rarely experiences:accompanied by widespread damage....................	64-72	56-63	103-117	28.5-32.6	94-106
12	Hurricane........	....	73-82	64-71	118-133	32.7-36.9	107-121
13	....	....	83-92	72-80	134-149	37.0-41.4	122-136
14	....	....	93-102	81-89	150-166	41.5-46.1	137-151
15	....	....	104-114	90-99	167-183	46.2-50.9	152-166
16	....	....	115-125	100-108	184-201	51.0-56.0	167-183
17	....	....	126-136	109-118	202-220	56.1-61.2	184-201

Source: Table 36 (p.119) in R.J. List (1951):Smithsonian Meteorological Tables:Smithsonian Miscell.Coll.Vol. 114.

Table VIII demonstrates the diurnal variation of various recorded parameters. Hourly averages are determined by arithmetically averaging five-minute samples, except for wind direction averages which are computed vectorially assuming unit vector magnitudes. Totals in the diurnal wind direction tables are vector averages of the columns and rows. For all parameters, a blank entry in the diurnal variation table indicates that less than half (i.e., less than 6) of the five-minute samples for that hour are present.

All times given in the data presentation are Mountain Standard Time.

To facilitate comparison of recorded concentrations to ambient air quality standards, the following regulations are presented.

TABLE II

FEDERAL AND COLORADO STANDARDS

	Primary	Secondary	Non-Designated Area	Designated Area		
				1973	1976	1980
Particulate						
Annual G. M.	75 μg/m³	60 μg/m³	45 μg/m³	70 μg/m³	55 μg/m³	45 μg/m³
24 Hr. Max.*	260	150	150	200	180	150
Sulfur Oxides						
Annual	80(.03ppm)		--	60(.02ppm)	25(.009ppm)	10(.004ppm)
24 Hr. Max.*	365(.14ppm)		15(.005ppm)	300(.1ppm)	150(.05ppm)	55(.02ppm)
3 Hr. Max.*	--	1300(.5ppm)	--	--	--	--
1 Hr. Max.**	--	--	--	800(.28ppm)	300(.1ppm)	--
Oxidant						
1 Hr. Max.*	160(.08ppm)	160				
8 Hr. Max.*	--	--				
Annual	--	--				
Hydrocarbons						
3 Hr. Max.* 6-9 a.m.	160(.24ppm)	160				
Carbon Monoxide						
Max. 8 Hrs.*	10000(9ppm)	10000				
Max. 1 Hr.*	40000(35ppm)	40000				
Nitrogen Dioxide						
Annual	100(.05ppm)	100				

Units are micrograms per cubic meter and ppm in parenthesis.

*Not to be exceeded more than once per year.

**Not to be exceeded more than once per month.

TABLE III
AVERAGES FOR FEBRUARY 1 THRU 28

```
                        TABLE III. AVERAGES FOR FEB   1 THRU 28
        (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
             TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
             PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

      NITROGEN OXIDES(NOX)                NITRIC OXIDE(NO)                  NITROGEN DIOXIDE(NO2)

SITE    023                              023                              023
         .1                               .0                               .1
----------------------------------------------------------------------------------------------------

       SULFUR DIOXIDE(SO2)                   PYRANOMETER                       HYDROGEN SULFIDE

SITE    023                              023                              023
         .4                           7844.1                               .1
----------------------------------------------------------------------------------------------------

       TOTAL HYDROCARBONS                      METHANE                     NON-METHANE HYDROCARBONS

SITE    023                              023                              023
     1007.8                            745.8                            254.3
----------------------------------------------------------------------------------------------------

        CARBON MONOXIDE                         OZONE                        BAROMETRIC PRESSURE

SITE    023                              023                              023
      312.0                             74.3                            790.6
----------------------------------------------------------------------------------------------------

       TOTAL PRECIPITATION                   PARTICULATE

SITE    023                              023
        .04                              6.7
----------------------------------------------------------------------------------------------------
```

```
                         TABLE III. AVERAGES FOR FEB    1 THRU 28
          (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                         WIND SPEED

SITE 023
      (  8-FT)            ( 30-FT)            (100-FT)            (200-FT)
        1.3.                1.9                 2.2                 2.9
------------------------------------------------------------------------------------------

                                        WIND DIRECTION

SITE 023
      (  8-FT)            ( 30-FT)            (100-FT)            (200-FT)
      254.8               251.5               259.1               262.0
------------------------------------------------------------------------------------------

                                      RELATIVE HUMIDITY

SITE 023
      (  8-FT)            ( 30-FT)            (100-FT)            (200-FT)
       64.5                                    69.9                66.0
------------------------------------------------------------------------------------------

                                         TEMPERATURE

SITE 023
      (  8-FT)            ( 30-FT)            (100-FT)            (200-FT)
       29.2                28.9                29.5                27.9
------------------------------------------------------------------------------------------
```

TABLE IV
DAILY AVERAGES FOR FEBRUARY 1 THRU 28

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	NITROGEN OXIDES(NOX)	NITRIC OXIDE(NO)	NITROGEN DIOXIDE(NO2)
SITE	023	023	023
DATE			
2/ 1	.0	.0	.0
2/ 2	.0	.0	.0
2/ 3	.6	.1	.5
2/ 4	.7	.1	.6
2/ 5	.0	.0	.0
2/ 6	.1	.0	.0
2/ 7	.0	.0	.0
2/ 8	.0	.0	.0
2/ 9	.0	.0	.0
2/10	.0	.0	.0
2/11	.4	.2	.3
2/12	.0	.0	.0
2/13	.2	.0	.2
2/14	.3	.3	.0
2/15	.0	.0	.0
2/16	.0	.0	.0
2/17	.0	.0	.0
2/18	.1	.0	.1
2/19	.1	.1	.0
2/20	.1	.1	.0
2/21	.1	.1	.0
2/22	.0	.0	.0
2/23	.0	.0	.0
2/24	.0	.0	.0
2/25	.0	.0	.0
2/26	.0	.0	.0
2/27	.0	.0	.0
2/28	.0	.0	.0

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28

(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	SULFUR DIOXIDE(SO2)	PYRANOMETER	HYDROGEN SULFIDE
SITE	023	023	023
DATE			
2/ 1	.0	150.1	.9
2/ 2	.0	177.4	1.0
2/ 3	3.0	318.8	.3
2/ 4	4.8	275.4	.0
2/ 5		227.4	.0
2/ 6		307.6	.0
2/ 7	1.8	318.8	.0
2/ 8	1.2	318.3	.0
2/ 9	.0	264.0	.0
2/10	.0	289.0	.0
2/11	.0	226.1	.2
2/12	.0	282.9	.0
2/13	.0	237.2	.0
2/14	.0	224.7	.5
2/15	.0	300.5	.4
2/16	.0	319.8	.0
2/17	.0	294.0	.0
2/18	.0	304.0	.0
2/19	.0	358.4	.0
2/20	.0	370.8	.0
2/21	.0	283.4	.0
2/22	.3	92.5	.0
2/23	.7	360.5	.0
2/24	.0	312.6	.0
2/25	.0	224.7	.0
2/26	.0	208.9	.0
2/27	.0	409.1	.0
2/28	.0	387.3	.0

TABLE IV, DAILY AVERAGES FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	TOTAL HYDROCARBONS	METHANE	NON-METHANE HYDROCARBONS
SITE	023	023	023
DATE			
2/ 1	1072.2		
2/ 2	1037.1	518.9	518.2
2/ 3	1097.7		
2/ 4	1089.5	731.8	357.7
2/ 5	1086.7	679.0	407.7
2/ 6			
2/ 7			
2/ 8	961.2	861.4	99.8
2/ 9	926.7	861.5	65.2
2/10	913.3	901.0	11.2
2/11			
2/12	828.8	767.1	61.7
2/13	822.6	765.7	57.0
2/14	808.0	767.8	40.1
2/15	798.5	733.6	64.9
2/16	825.0	732.1	92.9
2/17	1185.6	746.7	438.9
2/18	1058.2	781.0	277.2
2/19	962.5	749.5	268.2
2/20	1032.7		
2/21			
2/22			
2/23			
2/24	1153.1	720.2	433.0
2/25	1126.2	718.2	408.0
2/26	1110.3	705.7	408.6
2/27	1149.0	696.5	452.5
2/28	1118.2	661.2	457.0

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	CARBON MONOXIDE	OZONE	BAROMETRIC PRESSURE
SITE	023	023	023
DATE			
2/ 1	256.5	67.1	785.1
2/ 2	270.3	60.0	787.4
2/ 3	255.2	72.2	793.4
2/ 4	221.2	72.9	794.2
2/ 5	351.9	78.6	791.3
2/ 6	264.6	76.3	792.2
2/ 7	372.9	77.0	795.0
2/ 8	381.4	81.6	793.4
2/ 9	381.7	76.3	790.1
2/10	433.2	73.7	792.2
2/11		71.4	794.5
2/12	292.8	68.3	797.0
2/13	273.6	69.6	793.1
2/14	241.1	68.0	793.0
2/15	240.5	75.1	793.6
2/16	250.9	73.3	794.5
2/17	317.8	71.6	793.2
2/18	503.5	75.7	794.5
2/19	541.3	72.6	796.8
2/20	169.6	79.5	793.4
2/21		72.1	783.7
2/22		72.4	776.6
2/23		77.6	782.2
2/24		78.1	781.3
2/25		71.3	784.1
2/26		79.2	787.6
2/27		85.9	792.0
2/28		83.5	790.7

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28

(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

	TOTAL PRECIPITATION	PARTICULATE
SITE	023	023
DATE		
2/ 1		3.0
2/ 2		5.0
2/ 3		8.0
2/ 4		
2/ 5		17.0
2/ 6		9.0
2/ 7		8.0
2/ 8		5.0
2/ 9		9.0
2/10		6.0
2/11		8.0
2/12		5.0
2/13		5.0
2/14		9.0
2/15		4.0
2/16		7.0
2/17		13.0
2/18		14.0
2/19		3.0
2/20		7.0
2/21		23.0
2/22	.03	10.0
2/23		5.0
2/24		4.0
2/25		5.0
2/26	.01	4.0
2/27		3.0
2/28		11.0

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28

(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

WIND SPEED

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
2/ 1	.2	.2	.4	1.3
2/ 2	2.3	3.7	4.6	5.0
2/ 3	.5	.8	.8	.8
2/ 4	1.9	2.5	3.1	3.4
2/ 5	1.8	2.6	2.7	2.9
2/ 6	1.5	2.1	2.5	2.9
2/ 7	.7	.9	1.4	1.6
2/ 8	1.7	2.7	3.3	2.6
2/ 9	1.3	1.6	1.8	2.4
2/10	1.4	2.1	2.7	3.3
2/11	1.5	2.1	2.9	3.4
2/12	1.0	1.5	2.1	2.8
2/13	.8	.9	1.3	2.3
2/14	1.9	2.6	3.6	4.6
2/15	1.1	1.6	1.8	2.4
2/16	2.8	3.9	5.1	7.0
2/17	2.0	2.9	4.4	6.9
2/18	.9	.9	1.1	1.1
2/19	1.3	1.6	2.0	2.3
2/20	1.7	2.5	3.6	5.4
2/21	6.7	9.2	11.6	14.1
2/22	4.1	6.4	7.5	9.0
2/23	3.7	5.4	6.8	8.3
2/24	5.1	7.2	8.3	9.4
2/25	5.0	7.1	8.6	9.8
2/26	2.3	3.2	3.6	4.4
2/27	1.6	2.6	3.6	4.8
2/28	3.9	6.0	8.1	9.9

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

WIND DIRECTION

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
2/ 1	306.5	288.4	281.1	273.1
2/ 2	296.8	296.3	308.4	322.0
2/ 3	271.6	255.8	295.2	299.7
2/ 4	283.8	283.9	302.6	307.2
2/ 5	195.3	191.1	192.9	206.0
2/ 6	286.1	289.6	306.8	303.0
2/ 7	314.8	325.1	340.5	337.7
2/ 8	153.6	156.1	158.5	176.5
2/ 9	283.5	281.9	317.5	326.4
2/10	284.2	279.6	299.9	308.4
2/11	329.7	337.0	353.4	353.7
2/12	183.7	175.9	184.6	204.7
2/13	307.1	303.3	321.4	308.8
2/14	348.7	354.3	8.5	11.5
2/15	274.8	255.2	248.7	246.0
2/16	194.5	194.8	198.8	206.4
2/17	261.1	249.7	245.3	242.5
2/18	319.4	316.6	344.2	335.5
2/19	296.3	293.9	306.5	303.2
2/20	209.8	206.4	211.3	216.0
2/21	191.0	192.6	198.5	204.2
2/22	275.2	272.1	281.5	283.2
2/23	232.1	232.5	240.7	244.7
2/24	269.5	269.5	275.5	279.5
2/25	335.1	333.3	341.3	342.0
2/26	232.2	232.9	240.7	249.5
2/27	273.4	270.1	275.3	277.7
2/28	185.7	184.5	189.0	195.3

CORPORATION

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

RELATIVE HUMIDITY

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
2/ 1	74.7		79.6	76.0
2/ 2	87.9		92.3	89.1
2/ 3	75.1		80.4	75.4
2/ 4	69.1		75.2	70.7
2/ 5	62.4		67.3	63.0
2/ 6	64.4		70.5	66.2
2/ 7	56.1		61.7	57.7
2/ 8	48.0		53.2	50.1
2/ 9	44.3		49.7	46.7
2/10	47.2		53.6	51.0
2/11	65.7		72.8	69.6
2/12	71.1		76.1	73.1
2/13	60.4		65.0	62.6
2/14	79.3		87.5	83.2
2/15	62.2		66.7	62.6
2/16	54.7		59.4	56.1
2/17	49.2		53.7	51.3
2/18	49.5		54.0	51.9
2/19	54.5		58.6	56.7
2/20	44.4		48.8	46.1
2/21	38.8		43.6	41.3
2/22	91.4		96.4	89.6
2/23	75.7		83.4	78.0
2/24	69.4		77.7	72.6
2/25	83.7		90.6	85.4
2/26	83.0		89.7	82.7
2/27	75.6		82.6	76.2
2/28	61.6		67.1	61.7

TABLE IV. DAILY AVERAGES FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

TEMPERATURE

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
2/ 1	28.6	27.7	28.0	26.4
2/ 2	24.7	22.9	22.6	20.7
2/ 3	23.2	23.1	23.9	23.0
2/ 4	25.0	24.8	25.4	24.5
2/ 5	29.5	29.6	30.6	28.7
2/ 6	26.4	26.1	26.4	24.9
2/ 7	27.0	27.4	28.2	27.5
2/ 8	32.0	31.9	33.0	32.0
2/ 9	29.8	30.4	31.1	30.3
2/10	29.4	29.8	30.4	28.7
2/11	27.9	27.9	28.9	27.0
2/12	30.1	29.9	30.9	29.3
2/13	33.9	34.4	35.3	33.9
2/14	28.3	27.4	27.5	26.0
2/15	32.5	32.9	33.3	32.7
2/16	37.1	37.6	38.4	37.6
2/17	39.5	40.0	40.8	39.5
2/18	37.6	38.3	38.9	37.7
2/19	35.9	36.9	37.7	36.6
2/20	39.8	40.6	41.4	40.5
2/21	43.3	43.7	43.7	42.1
2/22	27.1	25.4	25.1	23.0
2/23	24.0	22.4	22.4	20.7
2/24	25.5	23.6	23.2	21.3
2/25	18.7	16.5	16.0	14.4
2/26	16.7	15.1	15.1	13.7
2/27	18.9	17.2	16.6	15.1
2/28	26.1	25.2	25.4	24.3

TABLE V

MAXIMUM FIVE-MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEBRUARY 1 THRU 28

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          TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
       (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
            TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
            PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              NITROGEN OXIDES(NOX)

     SITE      023
DATE
----------------------------------------------------------------------
 2/ 1       .0( 9:35)
 2/ 2       .0( 0:00)
 2/ 3      1.9(13:05)
 2/ 4      1.9( 0:00)
 2/ 5       .0( 0:00)
 2/ 6      1.9( 6:05)
 2/ 7      1.9( 0:00)
 2/ 8       .0( 0:00)
 2/ 9      1.9(14:10)
 2/10      1.9(12:10)
----------------------------------------------------------------------
 2/11      1.9( 0:25)
 2/12      1.9( 4:30)
 2/13      1.9( 2:05)
 2/14     16.9(10:00)
 2/15      1.9( 0:00)
 2/16       .0( 0:00)
 2/17      5.6(15:45)
 2/18      1.9( 0:30)
 2/19      1.9( 2:05)
 2/20      1.9( 2:05)
----------------------------------------------------------------------
 2/21      1.9( 3:05)
 2/22       .0( 0:00)
 2/23      1.9(17:00)
 2/24      1.9( 3:15)
 2/25     11.2( 8:50)
 2/26       .0( 0:00)
 2/27       .0( 0:00)
 2/28       .0( 0:00)
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                 TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB    1 THRU 28
             (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                     TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                     PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                          NITRIC OXIDE(NO)

    SITE      023
DATE
-----------------------------------------------------------------------------------------------------
 2/ 1         .0( 9:35)
 2/ 2         .0( 0:00)
 2/ 3        1.9(16:25)
 2/ 4        1.9( 0:05)
 2/ 5         .0( 0:00)
 2/ 6        1.9( 6:05)
 2/ 7        1.9( 0:00)
 2/ 8         .0( 0:00)
 2/ 9         .0( 0:00)
 2/10        1.9(12:10)
-----------------------------------------------------------------------------------------------------
 2/11        1.9( 0:25)
 2/12         .0( 0:00)
 2/13         .0( 0:00)
 2/14       16.9(10:00)
 2/15        1.9( 0:00)
 2/16         .0( 0:00)
 2/17        5.6(15:45)
 2/18        1.9(10:30)
 2/19        1.9( 2:05)
 2/20        1.9( 2:05)
-----------------------------------------------------------------------------------------------------
 2/21        1.9( 3:05)
 2/22         .0( 0:00)
 2/23        1.9(17:35)
 2/24        1.9( 3:15)
 2/25       11.2( 8:50)
 2/26         .0( 0:00)
 2/27         .0( 0:00)
 2/28         .0( 0:00)
```

```
          TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB    1 THRU 28
      (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
           TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
            PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              NITROGEN DIOXIDE(NO2)

     SITE       023
DATE
--------------------------------------------------------------------------------------------------
2/ 1          .0( 9:35)
2/ 2          .0( 0:00)
2/ 3         1.9(13:05)
2/ 4         1.9( 0:00)
2/ 5          .0( 0:00)
2/ 6         1.9( 8:10)
2/ 7          .0( 0:00)
2/ 8          .0( 0:00)
2/ 9         1.9(14:10)
2/10         1.9(12:35)
--------------------------------------------------------------------------------------------------
2/11         1.9(12:00)
2/12         1.9( 4:30)
2/13         1.9( 2:05)
2/14          .0( 0:00)
2/15         1.9( 1:05)
2/16          .0( 0:00)
2/17         1.9(20:30)
2/18         1.9( 0:30)
2/19          .0( 0:00)
2/20          .0( 0:00)
--------------------------------------------------------------------------------------------------
2/21          .0( 0:00)
2/22          .0( 0:00)
2/23         1.9(17:00)
2/24         1.9( 3:35)
2/25          .0( 0:00)
2/26          .0( 0:00)
2/27          .0( 0:00)
2/28          .0( 0:00)
```

TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

SULFUR DIOXIDE(SO2)

DATE	SITE 023
2/ 1	.0(0:00)
2/ 2	.0(0:00)
2/ 3	15.6(16:30)
2/ 4	15.6(1:10)
2/ 5	10.4(4:25)
2/ 6	7.8(18:00)
2/ 7	13.0(17:15)
2/ 8	13.0(1:25)
2/ 9	.0(0:00)
2/10	5.2(13:55)
2/11	.0(0:00)
2/12	.0(0:00)
2/13	.0(0:00)
2/14	2.6(3:50)
2/15	.0(0:00)
2/16	.0(0:00)
2/17	2.6(15:35)
2/18	.0(0:00)
2/19	.0(0:00)
2/20	.0(0:00)
2/21	.0(0:00)
2/22	5.2(22:45)
2/23	2.6(0:20)
2/24	.0(0:00)
2/25	.0(0:00)
2/26	.0(0:00)
2/27	.0(0:00)
2/28	.0(0:00)

TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

PYRANOMETER

DATE	SITE 023
2/ 1	5.45(13:20)
2/ 2	4.65(13:45)
2/ 3	4.15(12:20)
2/ 4	4.20(12:00)
2/ 5	3.30(13:55)
2/ 6	4.35(12:50)
2/ 7	4.30(12:15)
2/ 8	4.30(12:15)
2/ 9	4.35(11:50)
2/10	4.40(12:20)
2/11	5.25(12:05)
2/12	5.25(13:00)
2/13	4.65(12:15)
2/14	4.60(12:25)
2/15	4.75(11:30)
2/16	4.80(12:20)
2/17	4.25(12:35)
2/18	5.65(11:50)
2/19	4.65(12:20)
2/20	4.75(12:05)
2/21	5.30(11:00)
2/22	1.65(14:15)
2/23	6.35(13:00)
2/24	5.80(11:40)
2/25	4.95(13:45)
2/26	5.15(11:10)
2/27	6.60(10:40)
2/28	5.10(11:55)

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             TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
         (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                   HYDROGEN SULFIDE

    SITE       023
DATE
------------------------------------------------------------------------------------------
 2/ 1        2.8(10:00)
 2/ 2        2.8( 1:10)
 2/ 3        5.5(13:20)
 2/ 4         .0( 0:00)
 2/ 5         .0( 0:00)
 2/ 6         .0( 0:00)
 2/ 7         .0( 0:00)
 2/ 8         .0( 0:00)
 2/ 9         .0( 0:00)
 2/10         .0( 0:00)
------------------------------------------------------------------------------------------
 2/11        4.2(14:40)
 2/12         .0( 0:00)
 2/13         .0( 0:00)
 2/14        2.8(13:25)
 2/15        2.8(12:00)
 2/16         .0( 0:00)
 2/17        9.7(13:35)
 2/18       11.1(15:00)
 2/19         .0( 0:00)
 2/20         .0( 0:00)
------------------------------------------------------------------------------------------
 2/21         .0( 0:00)
 2/22         .0( 0:00)
 2/23         .0( 0:00)
 2/24         .0( 0:00)
 2/25        1.4( 9:25)
 2/26         .0( 0:00)
 2/27         .0( 0:00)
 2/28         .0( 0:00)
```

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            TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
     (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
            TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
            PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                      TOTAL HYDROCARBONS

    SITE      023
DATE
------------------------------------------------------------------------------------------
 2/ 1      1295.9(15:50)
 2/ 2      1324.6( 4:55)
 2/ 3      2349.6(12:10)
 2/ 4      1338.9(12:55)
 2/ 5      1241.9(11:15)
 2/ 6      1326.6(10:35)
 2/ 7      1510.9(10:15)
 2/ 8      1141.6(13:50)
 2/ 9      1388.4(11:45)
 2/10      1049.8(15:00)
------------------------------------------------------------------------------------------
 2/11      2471.4(15:40)
 2/12      1555.8(23:35)
 2/13       974.9(10:50)
 2/14       898.7( 1:10)
 2/15      1186.5(18:35)
 2/16      3228.8( 5:50)
 2/17      3254.2( 1:45)
 2/18      3256.2( 3:10)
 2/19      1549.3(14:10)
 2/20      3256.2( 6:10)
------------------------------------------------------------------------------------------
 2/21      3015.8(11:00)
 2/22
 2/23      1221.1(18:50)
 2/24      2333.4(13:45)
 2/25      1295.9(19:20)
 2/26      1454.8(10:30)
 2/27      1436.6( 9:45)
 2/28      1172.2(13:55)
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                TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
      (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                          METHANE

     SITE      023
DATE
---------------------------------------------------------------------------------------------
 2/ 1
 2/ 2        575.7(19:50)
 2/ 3       2349.6(12:10)
 2/ 4        914.3(17:00)
 2/ 5        828.4( 0:05)
 2/ 6
 2/ 7        936.5(10:15)
 2/ 8        883.1( 2:20)
 2/ 9       1043.3(11:50)
 2/10        997.0(11:45)
---------------------------------------------------------------------------------------------
 2/11       2471.4(15:40)
 2/12       1555.8(23:35)
 2/13        845.9(23:30)
 2/14        871.3( 1:15)
 2/15        753.5(11:05)
 2/16        756.7(12:10)
 2/17       1991.5(22:50)
 2/18       2645.3( 3:45)
 2/19        831.6( 4:25)
 2/20
---------------------------------------------------------------------------------------------
 2/21
 2/22
 2/23       1161.1(18:50)
 2/24       1121.4(19:35)
 2/25       1218.5(22:40)
 2/26       1116.2(20:25)
 2/27       1436.6( 9:45)
 2/28       1135.7( 6:55)
```

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        TABLE V, MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
    (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
            TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
            PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                              NON-METHANE HYDROCARBONS

   SITE      023
DATE
------------------------------------------------------------------------------------------
 2/ 1
 2/ 2       785.4( 4:55)
 2/ 3       803.6(12:00)
 2/ 4       663.0(12:55)
 2/ 5       583.5(16:30)
 2/ 6
 2/ 7       970.3(10:20)
 2/ 8       294.4(13:50)
 2/ 9       390.1(11:45)
 2/10       574.4(15:20)
------------------------------------------------------------------------------------------
 2/11       362.7(14:25)
 2/12       128.9(11:00)
 2/13       207.1(10:50)
 2/14       330.8( 9:10)
 2/15       476.0(18:35)
 2/16      2545.0( 5:50)
 2/17      2599.1( 1:45)
 2/18      2535.9( 3:10)
 2/19       954.1(14:35)
 2/20
------------------------------------------------------------------------------------------
 2/21
 2/22
 2/23       507.3(15:45)
 2/24      1753.1(13:45)
 2/25       899.3(23:35)
 2/26       896.7(10:30)
 2/27      1016.6(16:25)
 2/28       650.6( 1:05)
```

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          TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
        (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR,
              TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
              PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                         CARBON MONOXIDE

    SITE      023
DATE
------------------------------------------------------------------------------------------------
 2/ 1       316.8( 3:15)
 2/ 2       355.6(10:25)
 2/ 3      2939.2(11:35)
 2/ 4      2331.7(15:35)
 2/ 5      4737.5(11:25)
 2/ 6       367.0(11:15)
 2/ 7      3913.6(10:15)
 2/ 8       784.1(23:30)
 2/ 9      2159.6(13:15)
 2/10      2271.3(15:00)
------------------------------------------------------------------------------------------------
 2/11       606.3(11:55)
 2/12       629.1(16:00)
 2/13      4141.5(14:05)
 2/14      4258.9( 9:05)
 2/15      4403.6( 9:35)
 2/16       355.6(17:35)
 2/17      2493.6(18:10)
 2/18      2487.9( 4:00)
 2/19       650.7(14:00)
 2/20      2638.3( 5:00)
------------------------------------------------------------------------------------------------
 2/21
 2/22
 2/23
 2/24
 2/25
 2/26
 2/27
 2/28
```

```
        TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
   (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
         TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
         PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                      OZONE

    SITE     023
DATE
------------------------------------------------------------------------------------------
 2/ 1      78.1(14:50)
 2/ 2      78.1(16:35)
 2/ 3      84.0(14:10)
 2/ 4      84.0(11:35)
 2/ 5      89.9(14:45)
 2/ 6      86.0(16:50)
 2/ 7      89.9(12:15)
 2/ 8      89.9(13:10)
 2/ 9      84.0(12:00)
 2/10      82.1(14:55)
------------------------------------------------------------------------------------------
 2/11      78.1( 0:45)
 2/12      80.1(12:20)
 2/13      80.1(15:10)
 2/14      78.1(13:05)
 2/15      82.1( 9:55)
 2/16      82.1(10:40)
 2/17      80.1(16:20)
 2/18      84.0(11:20)
 2/19      84.0(15:05)
 2/20      87.9(10:55)
------------------------------------------------------------------------------------------
 2/21      80.1( 2:20)
 2/22      86.0(12:30)
 2/23      86.0(13:00)
 2/24      89.9(11:50)
 2/25      84.0(14:20)
 2/26      97.7(19:05)
 2/27      95.7(16:00)
 2/28      91.8( 0:45)
```

TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

BAROMETRIC PRESSURE

DATE	SITE 023
2/ 1	787.0(0:00)
2/ 2	792.0(23:25)
2/ 3	795.0(11:00)
2/ 4	796.0(9:15)
2/ 5	794.0(0:00)
2/ 6	794.0(10:35)
2/ 7	796.0(7:45)
2/ 8	796.0(2:00)
2/ 9	792.0(3:00)
2/10	794.0(12:00)
2/11	797.0(21:10)
2/12	799.0(9:05)
2/13	796.0(2:00)
2/14	794.0(11:05)
2/15	795.0(0:00)
2/16	796.0(6:00)
2/17	794.0(1:00)
2/18	796.0(21:45)
2/19	798.0(7:50)
2/20	797.0(0:40)
2/21	790.0(0:00)
2/22	781.0(22:50)
2/23	785.0(9:20)
2/24	783.0(10:50)
2/25	788.0(22:35)
2/26	790.0(23:25)
2/27	794.0(8:40)
2/28	794.0(8:45)

```
          TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
        (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
               TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
               PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                                     TOTAL PRECIPITATION

    SITE      023
DATE
------------------------------------------------------------------------------------------------
 2/ 1
 2/ 2
 2/ 3
 2/ 4
 2/ 5
 2/ 6
 2/ 7
 2/ 8
 2/ 9
 2/10
------------------------------------------------------------------------------------------------
 2/11
 2/12
 2/13
 2/14
 2/15
 2/16
 2/17
 2/18
 2/19
 2/20
------------------------------------------------------------------------------------------------
 2/21
 2/22          .01( 2:20)
 2/23
 2/24
 2/25
 2/26          .01(19:15)
 2/27
 2/28
```

```
             TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB   1 THRU 28
          (UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                  TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
                  PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

                             WIND SPEED       -     WIND DIRECTION

   SITE 023
DATE      (  8-FT)                  ( 30-FT)                 (100-FT)                 (200-FT)
------------------------------------------------------------------------------------------------------
2/ 1         8.0   299.0(16:55)        11.0   295.0(16:55)        13.0   296.0(17:00)       12.0   300.0(16:50)
2/ 2         8.0   350.0(14:45)        11.0     3.0(17:50)        14.0     9.0(17:50)       15.0     7.0(17:50)
2/ 3         6.0     2.0(13:15)         8.0   296.0(15:05)        11.0   202.0(19:35)       10.0   342.0(15:45)
2/ 4         8.0   318.0(12:55)        10.0   292.0(14:40)        11.0   302.0(14:40)       12.0   308.0(15:45)
2/ 5         8.0   184.0(13:20)        10.0   216.0(13:00)        11.0   199.0(12:45)       11.0   206.0(12:20)
2/ 6         7.0   275.0(12:55)         9.0   290.0(13:05)        10.0   293.0(13:05)        9.0   329.0(12:25)
2/ 7         8.0   339.0(13:35)         9.0   336.0(13:35)        10.0   330.0(14:05)       11.0   332.0(14:05)
2/ 8         8.0   180.0(17:55)        11.0   173.0(17:55)        15.0   176.0(17:55)       15.0   179.0(17:55)
2/ 9         9.0   309.0(15:10)        10.0   318.0(14:45)        12.0   310.0(15:10)       12.0   328.0(14:55)
2/10         8.0   303.0(12:40)         9.0   303.0(11:50)        11.0   310.0(12:40)       11.0   313.0(13:50)
------------------------------------------------------------------------------------------------------
2/11        14.0    26.0(15:50)        19.0     7.0(13:50)        22.0    15.0(13:50)       24.0     9.0(13:50)
2/12         9.0   188.0(17:05)        11.0   196.0(17:05)        13.0   204.0(17:05)       14.0   207.0(17:00)
2/13        10.0   322.0(16:40)        13.0   318.0(16:35)        15.0   326.0(16:40)       16.0   327.0(16:40)
2/14        13.0   344.0(13:25)        18.0   346.0(13:25)        20.0   352.0(13:25)       20.0   350.0(13:25)
2/15         9.0   316.0(14:20)        12.0   288.0(16:30)        14.0   293.0(16:30)       14.0   290.0(16:30)
2/16        12.0   210.0(15:30)        15.0   211.0(15:30)        20.0   213.0(17:45)       24.0   217.0(17:45)
2/17        10.0   252.0(13:35)        13.0   294.0(14:00)        15.0   195.0( 0:30)       20.0   205.0( 0:30)
2/18        11.0   344.0(13:15)        14.0   348.0(13:15)        16.0   348.0(14:10)       17.0   344.0(14:10)
2/19        10.0   301.0(15:20)        14.0   308.0(15:20)        15.0   315.0(15:20)       16.0   316.0(15:20)
2/20        10.0   211.0(16:05)        12.0   213.0(16:05)        16.0   210.0(18:10)       21.0   213.0(18:10)
------------------------------------------------------------------------------------------------------
2/21        22.0   187.0(19:35)        28.0   190.0(19:35)        33.0   194.0(19:35)       38.0   199.0(19:35)
2/22        20.0   226.0( 0:30)        25.0   223.0( 0:30)        30.0   227.0( 0:30)       33.0   234.0( 0:30)
2/23        12.0   225.0(14:25)        16.0   217.0(14:45)        18.0   223.0(14:45)       19.0   230.0(14:05)
2/24        15.0   256.0( 9:00)        18.0   253.0( 6:15)        22.0   256.0( 9:00)       23.0   260.0( 9:00)
2/25        16.0   360.0(15:40)        21.0   353.0(14:50)        25.0   358.0(14:50)       26.0   360.0(14:50)
2/26        13.0   317.0(20:15)        18.0   315.0(20:15)        22.0   324.0(20:15)       27.0   319.0(20:15)
2/27         8.0   277.0(15:35)        11.0   277.0(16:00)        15.0   201.0(23:40)       19.0   214.0(23:40)
2/28        11.0   193.0(15:05)        14.0   184.0(19:15)        18.0   190.0(19:15)       20.0   204.0( 6:05)
```

TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

RELATIVE HUMIDITY

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
2/ 1	99.0(20:45)		100.0(17:05)	99.0(21:35)
2/ 2	100.0(1:15)		100.0(0:00)	100.0(1:15)
2/ 3	93.0(5:05)		97.0(8:05)	91.0(8:00)
2/ 4	84.0(6:20)		89.0(7:35)	84.0(7:35)
2/ 5	73.0(2:40)		73.0(0:05)	68.0(23:05)
2/ 6	81.0(7:50)		87.0(7:50)	82.0(7:30)
2/ 7	76.0(6:50)		84.0(7:35)	76.0(7:10)
2/ 8	59.0(2:00)		63.0(2:00)	59.0(1:05)
2/ 9	55.0(6:40)		60.0(7:40)	53.0(8:20)
2/10	55.0(22:50)		59.0(23:55)	56.0(23:40)
2/11	91.0(23:55)		93.0(23:30)	88.0(21:10)
2/12	94.0(2:10)		97.0(1:50)	96.0(2:05)
2/13	75.0(8:05)		77.0(7:50)	73.0(8:10)
2/14	97.0(6:10)		100.0(4:05)	99.0(5:00)
2/15	82.0(1:45)		85.0(2:10)	80.0(1:25)
2/16	69.0(6:05)		70.0(7:10)	65.0(6:40)
2/17	57.0(5:55)		60.0(6:40)	57.0(7:20)
2/18	59.0(4:45)		60.0(2:50)	57.0(0:55)
2/19	72.0(7:40)		72.0(8:20)	64.0(6:05)
2/20	54.0(5:45)		58.0(7:05)	53.0(6:25)
2/21	45.0(23:55)		51.0(23:55)	43.0(23:50)
2/22	100.0(2:30)		100.0(1:55)	100.0(18:55)
2/23	93.0(5:00)		99.0(0:10)	95.0(0:00)
2/24	89.0(23:45)		100.0(23:40)	99.0(23:50)
2/25	99.0(2:50)		100.0(0:00)	100.0(7:35)
2/26	97.0(19:15)		100.0(14:35)	98.0(19:15)
2/27	96.0(6:15)		100.0(3:25)	99.0(8:00)
2/28	68.0(5:40)		72.0(23:30)	67.0(23:25)

TABLE V. MAXIMUM FIVE MINUTE AVERAGES AND TIME OF OCCURRENCE FOR FEB 1 THRU 28
(UNITS:CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
TEMPERATURE-DEGREES FAHRENHEIT; WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH;
PYRANOMETER-TOTAL LANGLEYS; PRESSURE-MILLIBARS; PRECIPITATION-INCHES)

TEMPERATURE

SITE 023

DATE	(8-FT)	(30-FT)	(100-FT)	(200-FT)
2/ 1	34.0(15:20)	32.0(14:50)	33.0(4:00)	31.0(4:00)
2/ 2	33.0(15:25)	30.0(15:25)	29.0(16:10)	27.0(15:25)
2/ 3	38.0(14:25)	35.0(14:15)	34.0(13:55)	33.0(14:40)
2/ 4	39.0(15:10)	35.0(14:45)	34.0(14:35)	32.0(14:30)
2/ 5	40.0(11:55)	38.0(14:20)	38.0(15:15)	35.0(14:40)
2/ 6	40.0(15:10)	36.0(14:35)	35.0(14:40)	33.0(15:25)
2/ 7	41.0(14:55)	40.0(15:05)	39.0(15:05)	36.0(15:00)
2/ 8	47.0(13:50)	45.0(14:20)	44.0(14:20)	42.0(14:55)
2/ 9	44.0(14:05)	42.0(15:10)	40.0(14:05)	39.0(14:45)
2/10	45.0(16:10)	42.0(15:55)	41.0(15:55)	39.0(16:00)
2/11	40.0(12:20)	37.0(11:45)	36.0(12:05)	34.0(12:20)
2/12	45.0(14:20)	44.0(15:20)	43.0(16:00)	41.0(16:30)
2/13	47.0(15:30)	45.0(15:25)	43.0(14:45)	41.0(14:55)
2/14	39.0(13:40)	35.0(13:35)	34.0(13:35)	32.0(13:40)
2/15	47.0(14:40)	46.0(15:45)	45.0(15:40)	44.0(16:00)
2/16	52.0(14:30)	50.0(14:10)	49.0(14:10)	48.0(14:35)
2/17	52.0(14:30)	50.0(14:15)	48.0(13:55)	47.0(14:45)
2/18	50.0(13:45)	48.0(14:05)	46.0(12:15)	44.0(12:15)
2/19	50.0(15:15)	48.0(15:15)	47.0(15:15)	45.0(14:50)
2/20	55.0(14:20)	54.0(14:20)	52.0(14:15)	51.0(14:55)
2/21	54.0(11:00)	51.0(12:25)	50.0(13:25)	48.0(14:40)
2/22	46.0(0:00)	46.0(0:00)	46.0(0:00)	44.0(0:00)
2/23	35.0(12:40)	31.0(16:15)	30.0(16:10)	28.0(15:00)
2/24	33.0(13:45)	29.0(13:40)	28.0(13:45)	28.0(14:15)
2/25	28.0(15:40)	23.0(14:25)	22.0(14:45)	21.0(14:45)
2/26	26.0(11:25)	22.0(11:50)	21.0(11:50)	20.0(12:00)
2/27	30.0(15:50)	25.0(14:45)	24.0(15:35)	23.0(15:35)
2/28	38.0(14:40)	34.0(14:40)	33.0(15:35)	32.0(15:25)

TABLE VI
THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR FEBRUARY 1 THRU 28

```
                    TABLE VI, THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR FEB   1-26
                              (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                         UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                                 WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                              NITROGEN OXIDES[WS: WD]
                                                 1-HOUR
SITE                    023

 1. 2/ 3(16:15-17:15)    1.9[ 4:338]
 2. 2/ 3(18:20-19:20)    1.9[ 5:211]
 3. 2/ 3(22:25-23:25)    1.9[ 2:154]
 4. 2/ 3(23:35- 0:35)    1.9[ 2:220]
 5. 2/ 4( 9:40-10:40)    1.9[ 7:284]
-------------------------------------------------------------------------------------------------------

                                               NITRIC OXIDE[WS: WD]
                                                 1-HOUR
SITE                    023

 1. 2/11( 7:15- 8:15)     .9[ 2:176]
 2. 2/21( 5:50- 6:50)     .9[ 6:172]
 3. 2/25( 8:45- 9:45)     .9[10:324]
 4. 2/ 3(18:10-19:10)     .8[ 5:213]
 5. 2/11( 2:20- 3:20)     .6[ 4:254]
-------------------------------------------------------------------------------------------------------

                                              NITROGEN DIOXIDE[WS: WD]
                                                 1-HOUR
SITE                    023

 1. 2/11(12:10-13:10)    1.9[12:341]
 2. 2/13( 3:55- 4:55)    1.9[ 4:166]
 3. 2/ 3(19:10-20:10)    1.7[ 3:176]
 4. 2/ 3(20:30-21:30)    1.7[ 2:202]
 5. 2/ 3(23:35- 0:35)    1.7[ 2:220)
-------------------------------------------------------------------------------------------------------
```

```
                 TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR FEB    1-28
                          (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                      UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                              WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                         SULFUR DIOXIDE(WS: WD)
                                            1-HOUR
SITE                 023

 1. 2/ 4( 0:55- 1:55)  11.7( 1:249)
 2. 2/ 3(16:25-17:25)  10.4( 4:332)
 3. 2/ 3(21:05-22:05)  10.0( 2:234)
 4. 2/ 3(18:15-19:15)   9.6( 5:212)
 5. 2/ 4( 5:00- 6:00)   8.9( 1:255)
--------------------------------------------------------------------------------------------------------

                                         SULFUR DIOXIDE(WS: WD)
                                            3-HOUR
SITE                 023

 1. 2/ 3(19:50-22:50)   9.4( 2:182)
 2. 2/ 3(23:40- 2:40)   9.3( 1:244)
 3. 2/ 4( 3:25- 6:25)   7.8( 1:222)
 4. 2/ 7(22:25- 1:25)   4.1( 1:129)
 5. 2/ 7(13:40-16:40)   3.6( 6:340)
--------------------------------------------------------------------------------------------------------

                                         SULFUR DIOXIDE(WS: WD)
                                           24-HOUR
SITE                 023

 1. 2/ 3- 2/ 4(14:00)   5.9( 3:268)
 2. 2/22- 2/23(15:00)   1.0( 6:259)
 3. 2/ 8- 2/ 9( 1:00)   1.0( 4:147)
 4. 2/ 6- 2/ 7(16:00)    .8( 2:272)
 5. 2/13- 2/14(10:00)    .0( 4:287)
--------------------------------------------------------------------------------------------------------
```

```
                    TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR FEB    1-28
                               (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                           UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                  WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                             HYDROGEN SULFIDE(WS: WD)
                                                 1-HOUR
SITE                  023

 1. 2/ 3(12:35-13:35)   3.6[ 4: 12]
 2. 2/ 2( 3:25- 4:25)   2.2[ 5:291]
 3. 2/11(13:55-14:55)   2.2[11:348]
 4. 2/ 1(18:45-19:45)   2.1[ 3:286]
 5. 2/ 1(15:15-16:15)   2.0[ 6:298]
------------------------------------------------------------------------------------------------------------

                                            TOTAL HYDROCARBONS(WS: WD)
                                                 3-HOUR(6-9AM)
SITE                  023

 1. 2/20( 6:00- 9:00)1164.5[ 2:171]
 2. 2/27( 6:00- 9:00)1132.8[ 2:253]
 3. 2/25( 6:00- 9:00)1120.4[ 8:320]
 4. 2/28( 6:00- 9:00)1117.6[ 5:190]
 5. 2/24( 6:00- 9:00)1115.1[10:262]
   PRIMARY STANDARD EXCEEDED  18 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED  18 TIMES AT SITE 023
------------------------------------------------------------------------------------------------------------
```

```
                             TABLE VI. THE FIVE MAXIMUM AVERAGES FOR FEB    1-28
                                       (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                            UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                   WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                              METHANE[WS: WD]
                                                3-HOUR(6-9AM)
SITE                 023

 1. 2/10( 6:00- 9:00) 893.9[ 1:217]
 2. 2/ 8( 6:00- 9:00) 864.4[ 4:121]
 3. 2/ 9( 6:00- 9:00) 849.1[ 2:320]
 4. 2/14( 6:00- 9:00) 767.0[ 2:182]
 5. 2/13( 6:00- 9:00) 764.2[ 5:137]
   PRIMARY STANDARD EXCEEDED  16 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED  16 TIMES AT SITE 023
----------------------------------------------------------------------------------------------------------
```

```
                                   TABLE VI. THE FIVE MAXIMUM AVERAGES FOR FEB   1-28
                                             (WITH ASSOCIATED WIND SPEED AND  WIND DIRECTION)
                                  UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER; WIND SPEED-MILES PER HOUR;
                                          WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                                  NON-METHANE HYDROCARBONS[WS: WD]
                                                         3-HOUR(6-9AM)
SITE                     023

 1. 2/28( 6:00- 9:00) 470.0[ 5:190]
 2. 2/27( 6:00- 9:00) 464.3[ 2:253]
 3. 2/25( 6:00- 9:00) 441.1[ 8:320]
 4. 2/26( 6:00- 9:00) 386.9[ 2:176]
 5. 2/24( 6:00- 9:00) 382.1[10:262]
   PRIMARY STANDARD EXCEEDED    8 TIMES AT SITE 023
 SECONDARY STANDARD EXCEEDED    8 TIMES AT SITE 023
------------------------------------------------------------------------------------------------------------------------------------
```

```
              TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR FEB   1-28
                        (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                    UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                           WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                      CARBON MONOXIDE(VS: 001)
                                          1-HOUR
SITE                023

 1. 2/ 5(11:15-12:15) 819.7[ 7:203]
 2. 2/18( 3:45- 4:45) 786.7[ 3:201]
 3. 2/13(13:50-14:50) 761.8[ 8:346]
 4. 2/ 7(10:40-11:40) 716.8[ 2:343]
 5. 2/17(18:00-19:00) 714.8[ 5:215]
-------------------------------------------------------------------------------------------------
```

```
                    TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR FEB    1-28
                              (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                          UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                 WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                            CARBON MONOXIDE(WS: WD)
                                               8-HOUR
SITE                023

 1. 2/19( 5:55-13:55) 569.6( 4:360)
 2. 2/18( 2:55-10:55) 517.2( 3:144)
 3. 2/ 7( 9:55-17:55) 484.1( 4:339)
 4. 2/ 9(12:55-20:55) 412.8( 5:301)
 5. 2/ 8( 6:55-14:55) 408.4( 3:131)
--------------------------------------------------------------------------------------------------------------------
```

```
                  TABLE VI. THE FIVE MAXIMUM INDEPENDENT SLIDING AVERAGES FOR FEB   1-28
                            (WITH ASSOCIATED WIND SPEED AND WIND DIRECTION)
                           UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER: WIND SPEED-MILES PER HOUR:
                                 WIND DIRECTION-DEGREES WITH RESPECT TO THE NORTH

                                             OZONE[WS: WD]
                                                1-HOUR
SITE                   023

 1. 2/26(18:55-19:55)  95.7[ 6:268]
 2. 2/27(15:50-16:50)  94.8[ 9:297]
 3. 2/27(16:55-17:55)  93.0[ 5:297]
 4. 2/26(20:00-21:00)  91.7[ 8:292]
 5. 2/27(10:55-11:55)  90.7[ 2:323]
------------------------------------------------------------------------------------------------------------
```

```
                       TABLE VI. THE FIVE MAXIMUM AVERAGES FOR FEB   1-28
                       UNITS: CONCENTRATIONS-MICROGRAMS PER CUBIC METER

                                         PARTICULATE
                                           24-HOUR
SITE              023

        1    2/21    23.0
        2    2/ 5    17.0
        3    2/18    14.0
        4    2/17    13.0
        5    2/28    11.0
--------------------------------------------------------------------------------------------
```

TABLE VII
FUNCTIONAL DEPENDENCE OF RECORDED PARAMETERS UPON WIND DIRECTION

```
                        NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

        NITROGEN OXIDES(NOX)                                               C-B SHALE OIL PROJECT
                                 TRAILER NO. -  23  PERIOD( 2/ 1/77 TO  2/26/77)

                                                              WIND DIRECTION
                      N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM  TOTAL
CONCENTRATION
  UG/M**3
   GT   160 :                                                                                          :
140 -   160 :                                                                                          :
120 -   140 :                                                                                          :
110 -   120 :                                                                                          :
100 -   110 :                                                                                          :
 90 -   100 :                                                                                          :
 80 -    90 :                                                                                          :
 70 -    80 :                                                                                          :
 60 -    70 :                                                                                          :
 50 -    60 :                                                                                          :
 40 -    50 :                                                                                          :
 30 -    40 :                                                                                          :
 20 -    30 :                                                                                          :
 10 -    20 :                                                                 1    1    3              :     5
  LT     10 :  314  197  210  171  250  306  361  375  481 1087  903  359  575  739  531  383  409 :  7651
  TOTAL     :  314  197  210  171  250  306  361  375  481 1087  903  359  576  740  534  383  409 :  7656
            ..........................................................................................
  MEAN          0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.     0.
```

```
                         NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

        NITRIC OXIDE(NO)                                                            C-B SHALE OIL PROJECT
                                  TRAILER NO. -  23  PERIOD( 2/ 1/77 TO  2/28/77)

                                                            WIND DIRECTION
                   N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM  TOTAL
 CONCENTRATION
   UG/M**3
   GT   160 :                                                                                   :
 140 -  160 :                                                                                   :
 120 -  140 :                                                                                   :
 110 -  120 :                                                                                   :
 100 -  110 :                                                                                   :
  90 -  100 :                                                                                   :
  80 -   90 :                                                                                   :
  70 -   80 :                                                                                   :
  60 -   70 :                                                                                   :
  50 -   60 :                                                                                   :
  40 -   50 :                                                                                   :
  30 -   40 :                                                                                   :
  20 -   30 :                                                                                   :
  10 -   20 :                                                                1    1    3        :     5
   LT    10 :  314  197  210  171  250  306  361  375  481 1087  903  359  575  739  531  383  409 :  7651
    TOTAL   :  314  197  210  171  250  306  361  375  481 1087  903  359  576  740  534  383  409 :  7656
            ..........................................................................................
    MEAN        0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.    0.
```

```
                 NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

      NITROGEN DIOXIDE(NO2)                                              C-B SHALE OIL PROJECT
                               TRAILER NO. -  23  PERIOD( 2/ 1/77 TO  2/28/77)

                                                         WIND DIRECTION
                     N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL
 CONCENTRATION
   UG/M**3
   GT    160 :                                                                                        :

 140 -   160 :                                                                                        :

 120 -   140 :                                                                                        :

 110 -   120 :                                                                                        :

 100 -   110 :                                                                                        :

  90 -   100 :                                                                                        :

  80 -    90 :                                                                                        :

  70 -    80 :                                                                                        :

  60 -    70 :                                                                                        :

  50 -    60 :                                                                                        :

  40 -    50 :                                                                                        :

  30 -    40 :                                                                                        :

  20 -    30 :                                                                                        :

  10 -    20 :                                                                                        :

    LT    10 :  314  197  210  171  250  306  361  375  481 1087  903  359  576  740  534  383  409 :  7656

    TOTAL    :  314  197  210  171  250  306  361  375  481 1087  903  359  576  740  534  383  409 :  7656
             ...........................................................................................

    MEAN         0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.     0.
```

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

SULFUR DIOXIDE(SO2) C-b SHALE OIL PROJECT
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

CONCENTRATION UG/M**3		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM		TOTAL
										WIND DIRECTION										
GT 140	:																		:	
130 - 140	:																		:	
120 - 130	:																		:	
110 - 120	:																		:	
100 - 110	:																		:	
90 - 100	:																		:	
80 - 90	:																		:	
70 - 80	:																		:	
60 - 70	:																		:	
50 - 60	:																		:	
40 - 50	:																		:	
30 - 40	:																		:	
20 - 30	:																		:	
10 - 20	:	5	3	2		1	5	6	2		9	8	2	9	6	3	12	7	:	80
LT 10	:	305	200	198	164	262	308	360	360	462	1004	828	354	584	699	466	371	348	:	7293
TOTAL	:	310	203	200	164	263	313	366	362	462	1013	836	356	593	705	469	383	355	:	7373
MEAN		0.	0.	0.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.		0.

```
                        NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

      HYDROGEN SULFIDE(H2S)                                                  C-B SHALE OIL PROJECT
                                  TRAILER NO. -  25  PERIOD( 2/ 1/77 TO  2/28/77)

                                                          WIND DIRECTION
                   N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM  TOTAL
CONCENTRATION
  UG/M**3
   GT    140 :                                                                                    :
 130 -   140 :                                                                                    :
 120 -   130 :                                                                                    :
 110 -   120 :                                                                                    :
 100 -   110 :                                                                                    :
  90 -   100 :                                                                                    :
  80 -    90 :                                                                                    :
  70 -    80 :                                                                                    :
  60 -    70 :                                                                                    :
  50 -    60 :                                                                                    :
  40 -    50 :                                                                                    :
  30 -    40 :                                                                                    :
  20 -    30 :                                                                                    :
  10 -    20 :                                                                       1            :     1
   LT     10 :   307  210  214  173  269  339  387  381  483 1086  894  356  571  702  485  386  409 :  7652

   TOTAL     :   307  210  214  173  269  339  387  381  483 1086  894  356  571  702  486  386  409 :  7653
             ..........................................................................................

   MEAN          0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.     0.
```

```
                    NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

        TOTAL HYDROCARBONS                                                        C-B SHALE OIL PROJECT
                                   TRAILER NO. -  23  PERIOD( 2/ 1/77 TO  2/28/77)

                                                                        WIND DIRECTION
                  N   NNE   NE   ENE    E   ESE   SE   SSE    S  SSW   SW  WSW    W  WNW   NW  NNW CALM   TOTAL L
 CONCENTRATION
   UG/M**3
   GT  4000 :                                                                                       :

3600 -  4000 :                                                                                      :

3400 -  3600 :                                                                                      :

3200 -  3400 :                              1          1    4    1                        1         :      8

3000 -  3200 :    2                         0          0    4    1          1    1        0         :      9

2800 -  3000 :    0                         0          0    2    0          0    0        0         :      2

2600 -  2800 :    0    1                1   1    3     0    1    0          0    1        1    1    :     10

2400 -  2600 :    0    0                0   0    2     0    5    0          0    0    1   0    1    :      9

2200 -  2400 :    0    0    1           0   0    0     0    3    1          1    0    0   0    0    :      6

2000 -  2200 :    0    0    0           1   0    0     0    3    1          0    1    0   0    0    :      6

1800 -  2000 :    1    0    1           0   1    0     0    4    0          1    0    0   0    1    :      9

1600 -  1800 :    1    0    0           2   0    0     0    5    4    4     6    4    2   1    1    :     30

   LT  1600 :  277  184  183  154  242  297  334  315  373  862  637  276  416  639  462  348  240 : 6239

   TOTAL    :  281  185  185  154  242  301  337  320  374  893  645  280  425  646  465  351  244 : 6328 30
            ..........................................................................................
                                                                                                         93
 MEAN/100      10.  10.   9.   9.   9.  10.  10.  10.  10.  10.  10.  10.  11.  11.  10.  10.   9.  10.

                                                                                                         73
                                                                                                         ..
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                          NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

        METHANE(CH4)                                                                       C-B SHALE OIL PROJECT
                                             TRAILER NO. -  23  PERIOD( 2/ 1/77 TO  2/28/77)

                                                                     WIND DIRECTION
                          N   NNE    NE   ENE    E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  CALM   TOTAL
  CONCENTRATION
    UG/M**3
     GT  2400 :                                                  1                                           1              :    2

 2200 -  2400 :                       1                          0                                           0              :    1

 2000 -  2200 :                       0                          0                                           0              :    0

 1800 -  2000 :                       0                          0           1                               0              :    1

 1600 -  1800 :                       0                          0           0                               0              :    0

 1400 -  1600 :                1      0            1     1       0           0                               0              :    3

 1200 -  1400 :                1      0            0     0       1           0     1                         0              :    3

 1000 -  1200 :    7     2      0            0     1     1       1     9     5     6     2     1     6     2     4     1  :   48

  800 -  1000 :   58    49     24    11   23    62    98      69    38    96   144    34    50   104    95    89    39  : 1083

  600 -   800 :  149    93    123   102  152   146   162     194   257   615   416   199   270   309   262   217   136  : 3804

  400 -   600 :   31     8      5    10    8     6    10       9    28    39    15    14    41   109    45    14     9  :  399

  200 -   400 :    0     0      1     0    0     0     0       0     0     2     0     0     1     2     1     1     0  :    8

     LT   200 :    0     0      0     0    0     0     0       0     0     0     0     0     0     0     2     0     0  :    2

      TOTAL   :  245   154    154   123  184   216   271     275   332   758   582   249   363   530   408   325   185  : 5354
              ...............................................................................................................

       MEAN      744.  781.  770.  740.  752.  773.  771.  777.  728.  735.  762.  737.  715.  716.  738.  763.  750.  745.
```

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

NON-METHANE HYDROCARBONS C-B SHALE OIL PROJECT
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

CONCENTRATION UG/M**3		WIND DIRECTION N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM		TOTAL
GT 3000	:																		:	
2800 - 3000	:																		:	
2600 - 2800	:																		:	
2400 - 2600	:							1			6	1			1		1		:	10
2200 - 2400	:	2						0			3	0		1	0		0		:	6
2000 - 2200	:	0					1	0	1		0	0		0	0		0	1	:	3
1800 - 2000	:	0	1				0	1	0		2	0		0	1		1	0	:	6
1600 - 1800	:	0	0				0	0	0		2	0		1	0		0	0	:	3
1400 - 1600	:	0	0				1	0	0		1	0		0	0		0	0	:	2
1200 - 1400	:	0	0				0	0	0		2	0		0	1		0	0	:	3
1000 - 1200	:	2	0	1			1	1	1		4	0	1	1	0	1	1	1	:	15
800 - 1000	:	0	0	1			1	0	0		7	3	4	11	6	5	1	3	:	42
600 - 800	:	11	5	0	1		2	4	3	6	11	5	8	22	34	17	8	2	:	139
LT 600	:	230	148	152	122	184	210	264	270	326	720	573	236	327	487	385	313	178	:	5125
TOTAL	:	245	154	154	123	184	216	271	275	332	758	582	249	363	530	404	325	185	:	5354
MEAN		280.	192.	145.	153.	146.	178.	161.	159.	247.	279.	248.	283.	363.	338.	307.	282.	177.		254.

NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

CARBON MONOXIDE(CO) C-B SHALE OIL PROJECT
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

CONCENTRATION UG/M**3	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
GT 4250 :						1			1	1						1	:	4
3750 - 4000 :		1	1			0			0	0						0	:	2
3500 - 3750 :		0	0			0			0	0						0	:	0
3250 - 3500 :	1	0	0			0			0	0						0	:	1
3000 - 3250 :	0	0	0			0			0	0						0	:	0
2750 - 3000 :	0	0	1			0			0	0						0	1 :	2
2500 - 2750 :	0	0	0			0			0	0						0	1 :	1
2250 - 2500 :	0	0	0			0			2	1				1		1	0 :	5
2000 - 2250 :	0	0	0			0			0	1				0	1	0	0 :	2
1750 - 2000 :	2	0	0			0			0	0				0	0	0	0 :	2
1500 - 1750 :	2	1	0			0			0	0				1	0	0	0 :	4
1250 - 1500 :	0	0	0			0			0	1				0	1	0	1 :	3
LT 1250 :	207	166	179	145	221	276	315	295	253	703	515	213	254	509	350	293	326 :	5220
TOTAL :	212	168	181	145	221	277	315	295	256	707	515	213	254	511	352	295	329 :	5246
MEAN	321.	333.	336.	305.	291.	308.	309.	327.	329.	307.	305.	294.	289.	302.	319.	351.	298.	312.

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                           NUMBER OF FIVE MINUTE SAMPLES BY WIND DIRECTION AND LEVEL

         OZONE(63)                                                                  C-B SHALE OIL PROJECT
                                     TRAILER NO. -  23  PERIOD( 2/ 1/77 TO  2/28/77)

                                                                WIND DIRECTION
                    N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW CALM  TOTAL
 CONCENTRATION
   UG/M**3
   GT   240 :                                                                                          :
220 -   240 :                                                                                          :
200 -   220 :                                                                                          :
180 -   200 :                                                                                          :
160 -   180 :                                                                                          :
140 -   160 :                                                                                          :
120 -   140 :                                                                                          :
100 -   120 :                                                                                          :
 80 -   100 :   95    42    29    15    17    63    87    78   161   342   173   123   239   278   179   143    55 : 2117
 60 -    80 :  226   162   173   151   235   266   293   295   317   737   682   215   315   388   352   260   347 : 5414
 40 -    60 :    9     7    12     7    17    10     7     8     5    12    52    30    53    90    17     9    10 :  355
 20 -    40 :    0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0 :    0
   LT    20 :    0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     1 :    1
   TOTAL    :  330   211   214   173   269   339   387   381   483  1091   907   368   607   756   548   412   411 : 7887
            ..........................................................................................................
     MEAN      75.   74.   72.   71.   71.   74.   75.   74.   76.   76.   73.   74.   75.   74.   75.   76.   73.   74.
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0

TABLE VIII

DIURNAL VARIATION OF VARIOUS RECORDED PARAMETERS

CORPORATION

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                    DIURNAL VARIATION OF NITROGEN OXIDES(UG/M**3)
                     TRAILER NO. - 23  PERIOD( 2/ 1/77 TO  2/28/77)

                                          HOUR
       1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

 1                                            *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 2     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *     0
 3     *   *   *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *     0
 4     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 5     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
 6     *   *   *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *     0
 7     *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *   *   *   *   *     0
 8     *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *     0
 9     *   *   *   *   *   *   *   *   *   *   *   *       *   *   *   *   *   *   *   *   *   *   *     0
10     *   *   *   *   *   *   *   *   *   *   *   *   *:   :      *   *   *   *   *   *   *   *   *     0
11     *   *   *   *   *   *   *   *   *   *    :  *:  *   *   *   *   *   *   *   *   *   *   *   *     0
12     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
13     *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
14     *   *   *   *   *   *   *   *   *   *:  *                       *   *   *   *   *   *   *   *     0
15     *   *   *   *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *     0
16     *   *   *   *   *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *     0
17     *   *   *   *   *   *   *   *   *   *   *:   :  *   *   *   *   *:  *   *   *   *   *   *   *     0
18     *   *   *   *   *   *   *   *   *   *   *   *   *:   :   :  *   *   *   *   *   *   *   *   *     0
19     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
20     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
21     *   *   *   *   *   *   *   *   *:   :  *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
22     *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *     0
23     *   *   *   *   *   *   *   *   *   *   *   *   *   *:  *:  *   *   *   *   *   *   *   *   *     0
24     *   *   *   *   *   *   *   *   *   *   *:  *:   :   :   :  *:  *   *   *   *   *   *   *   *     0
25     *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
26     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
27     *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *     0
28     *   *   *   *   *   *   *   *   *   *   *:  *   *   *   *   *   *   *   *   *   *   *   *   *     0
MEAN    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0

                 TOTAL NUMBER OF OBSERVATIONS =  7640     MEAN  =      0.

          * DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

          : INDICATES CALIBRATION DURING THE HOUR
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DIURNAL VARIATION OF NITRIC OXIDE(UG/M**3)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1											*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	0
3	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	0
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	*	*	0
7	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	0
10	*	*	*	*	*	*	*	*	*	*	*	*	*:	:		*	*	*	*	*	*	*	*	*	0
11	*	*	*	*	*	*	*	*	*	*	:	*:	*	*	*	*	*	*	*	*	*	*	*	*	0
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
13	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
14	*	*	*	*	*	*	*	*	*	*:	*						*	*	*	*	*	*	*	*	0
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	0
16	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
17	*	*	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*:	*	*	*	*	*	*	*	0
18	*	*	*	*	*	*	*	*	*	*	*	*	*:	:	:	*	*	*	*	*	*	*	*	*	0
19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
21	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
22	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
23	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
24	*	*	*	*	*	*	*	*	*	*	*:	*:	:	:	:	*:	*	*	*	*	*	*	*	*	0
25	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
28	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
MEAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TOTAL NUMBER OF OBSERVATIONS = 7640 MEAN = 0.

* DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF NITROGEN DIOXIDE(UG/M**3)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1											*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	0
3	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	0
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	*	*	0
7	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	0
10	*	*	*	*	*	*	*	*	*	*	*	*	*:	:		*	*	*	*	*	*	*	*	*	0
11	*	*	*	*	*	*	*	*	*	*	:	*:	*	*	*	*	*	*	*	*	*	*	*	*	0
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
13	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
14	*	*	*	*	*	*	*	*	*	*:	*						*	*	*	*	*	*	*	*	0
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	0
16	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
17	*	*	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*:	*	*	*	*	*	*	*	0
18	*	*	*	*	*	*	*	*	*	*	*	*	*:	:	:	*	*	*	*	*	*	*	*	*	0
19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
21	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
22	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
23	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
24	*	*	*	*	*	*	*	*	*	*	*:	*:	:	:	:	*:	*	*	*	*	*	*	*	*	0
25	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
28	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
MEAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TOTAL NUMBER OF OBSERVATIONS = 7640 MEAN = 0.

* DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF SULFUR DIOXIDE(UG/M**3)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	0
3	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	3
4	*	*	*	*	*	*	*	*	*	*	*	*													5
5				*	*	*	*	*	*	*	*	*	*	*											1
6												:	*:	*	*	*	*	*	*	*	*	*	*	*	0
7	*	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*	*	*	*	*	*	*	*	*	1
8	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	1
9	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	0
10	*	*	*	*	*	*	*	*	*	*	*	*	*:	:		*	*	*	*	*	*	*	*	*	0
11	*	*	*	*	*	*	*	*	*	*	:	*:	*	*		*	*	*	*	*	*	*	*	*	0
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
13	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
14	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	0
16	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
17	*	*	*	*	*	*	*	*	*	*	*:	:	*:	*	*	*	*	*	*	*	*	*	*	*	0
18	*	*	*	*	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*	*	*	*	*	*	0
19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
21	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
22	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
23	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
24	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
25	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
28	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
MEAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TOTAL NUMBER OF OBSERVATIONS = 7354 MEAN = 0.

* DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HYDROGEN SULFIDE(UG/M**3)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	0
3	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	0
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
6	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	*	*	0
7	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
8	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
9	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	0
10	*	*	*	*	*	*	*	*	*	*	*	*	*:	:		*	*	*	*	*	*	*	*	*	0
11	*	*	*	*	*	*	*	*	*	*	:	*:	*	*	*	*	*	*	*	*	*	*	*	*	0
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
13	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
14	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	0
16	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
17	*	*	*	*	*	*	*	*	*	*	*:	:	*:	*	*	*	*	*	*	*	*	*	*	*	0
18	*	*	*	*	*	*	*	*	*	*	*	*	*:	:	*	*	*	*	*	*	*	*	*	*	0
19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
21	*	*	*	*	*	*	*	*	*:	:	*	*	*:	*:	*	*	*	*	*	*	*	*	*	*	0
22	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
23	*	*	*	*	*	*	*	*	*	*	*	*	*	*:	*:	*	*	*	*	*	*	*	*	*	0
24	*	*	*	*	*	*	*	*	*	*	*:	*	*	*											0
25									:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
28	*	*	*	*	*	*	*	*	*	*	*:	*	*	*	*	*	*	*	*	*	*	*	*	*	0
MEAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TOTAL NUMBER OF OBSERVATIONS = 7647 MEAN = 0.

* DENOTES A VALID SAMPLE BELOW THE MINIMUM DETECTABLE LIMIT OF THE INSTRUMENT

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF TOTAL HYDROCARBONS(UG/M**3 X 10**-1)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	107	107	107	106	107	107	107	106	107	108	106	107	107	101	107	90	106	109	108	104	108	114	113	113	107
2	111	111	111	110	115	112	99	89		102	110	114	112	97	99	93	108	92	87	78					100
3										113	114	109	119	107	108	111	109	106	107	107	105	108	109	108	109
4	108	110	110	109	109	112	101	112	94	83	99	123	125	120	111	114	112	111	109	111	106				109
5								105	112	111	111	121	121	118	116	119	113	107	105	100		79			111
6									103	120	129	125	117	118	121	118	117	109	109						117
7	56									:	:	117	106	109	104	96	113	111							102
8	86	87	87	86	87	87	86	86	96	90	98	108	112	110	110	107	105	109	99	104	100	88	85	85	96
9	85	84	84	84	84	84	85	84	85	84	87	98		115	114	112	105	104	103	95	89	86	87	88	92
10	90	92	93	91	90	90	90	89	90	88	91	95	91:	:	:	96									91
11											:	:	:	:	109:	:	82	81	81	80	82	82	80	80	83
12	81	81	81	80	81	81	80	79	60	81	83	85	85	85	84	85	85	84	82	81	81	80	81	93	82
13	81	81	80	80	80	80	80	80	80	81:	82	83	85	85	86	85	84	82	81	80	80	80	81	85	82
14	84	86	83	82	81	81	80	80	81	75	81	80	82	84	83	84	82	81	80	77	75	74	76	75	80
15	75	76	76	73	73	75	76	76	77	79	81	83	83	86	86	85	83	80	83	80	60	81	80	78	79
16	79	82	81	78	79	98	78	77	81	87	99	84	86	81	78	77	77	77	84	85	81	79	79	83	82
17	78	138	181	175	178	60	81	80	79	101	102:	:	183	159	105	126	96	100	128	95	94	93	114	91	118
18	91	90	90	187	130	125	133	84	92	91	98	95	101	119	104	99	96	95	132	92	99	94	93	97	105
19	105	99	99	99	101	100	96	97	97	97	105	106	107	109	106	98	89	88	86	82	84	79	86	86	96
20	103	83	92	94	92	117	150	96	102	102	198	113	105	102	110	120	105	99	93	95	97	96	97	97	103
21	97	96	98	92	94	82	91	100	104:	:	112	185	:	:											105
22											:					:	:								
23														:	:	:	112:	111	112	110	111	109	107	108	110
24	112	113	110	110	111	114	112	110	112	115	112	114	115	131	114	113	112	115	122	116	126	124	113	114	115
25	111	110	109	110	109	110	111	112	113		114	113	113	113	111	114	113	113	113	120	113	111	115		112
26	110	109	108	107	108	109	109	109	111	113	117	115	114	112	112	111	111	111	111	111	112	111	111	111	111
27	111	111	112	115	113	113	113	112	114	120	126	124	115	115	117	117	116	113	112	112	112	112	111	111	115
28	110	110	111	111	111	111	110	111	113	116	113	113	114	115	115	113	113	110	111	110	109	109	108	107	111
MEAN	94	98	100	104	102	98	98	94	96	99	103	109	109	108	107	103	102	100	102	97	97	95	96	95	

TOTAL NUMBER OF OBSERVATIONS = 6259 MEAN = 101.

: INDICATES CALIBRAITON DURING THE HOUR

DIURNAL VARIATION OF METHANE(UG/M**3 X 10**-1)
TRAILER NO. - 23   PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1																									
2	54	54	53	53	53	54	53	52		52	52	51	51	50	49	48	47	48	49	53					51
3													87	80	79	80	73	78	77	74	74	72	73	72	76
4	71	69	70	69	67	70	67	65	64	64	64	66	68	69	70	82	85	87	87	83	83				72
5								70	69	69	70	69	70	68	67	67	64	65	64	64		59			67
6																									
7	56									:	:	89	87	87	87	87	88	87							83
8	86	87	87	86	87	87	86	86	86	86	86	86	86	86	86	85	85	85	85	85	85	85	85	85	86
9	85	84	84	84	84	84	85	84	85	84	85	90		86	86	85	86	85	86	88	89	86	87	88	86
10	90	92	93	91	90	90	90	89	89	88	91	95	91:	:	:										91
11											:	:	:	:	84:	:	76	76	76	76	77	78	76	76	77
12	76	76	76	75	75	76	76	75	75	76	76	76	76	76	76	76	76	76	76	76	76	76	76	88	76
13	76	76	76	76	75	76	76	76	76	76:	76	77	76	76	76	76	76	75	75	75	76	76	77	82	76
14	81	83	79	78	76	77	76	76	76	69	77	77	76	77	78	78	78	78	76	73	72	72	72	72	76
15	73	73	73	73	73	74	74	73	73	74	74	74	74	74	73	73	72	71	72	73	73	73	73	72	73
16	72	72	73	73	73	71	73	71	73	73	72	73	75	74	73	74	74	73	74	73	73	72	72	72	73
17	72	70	69	69	69	74	74	74	74	73	72:	:	75	76	76	76	76	76	76	76	76	76	87	75	74
18	75	75	75	95	75	75	75	76	76	76	76	77	77	79	77	79	78	78	79	78	78	78	78	76	78
19	78	78	78	78	80	81	77	76	74	72	73	73	73	75	61	65									75
20																									
21									:	:			:	:											
22											:					:	:								
23														:	:	:	75:	74	81	79	75	73	70	71	74
24	70	71	69	67	70	73	74	73	73	70	72	70	70	65	69	71	75	73	74	71	86	82	71	67	72
25	71	72	66	61	74	69	66	62	75		74	71	68	72	65	74	72	76	69	80	75	67	85		71
26	74	71	64	67	64	85	78	69	67	75	75	68	76	69	70	64	67	65	57	68	62	78	72	69	70
27	67	74	70	73	72	68	70	67	62	85	79	74	69	70	67	64	57	64	72	72	70	69	64	65	69
28	58	70	66	67	65	64	67	58	69	70	67	69	66	65	60	59	60	71	76	65	72	63	59	69	66
MEAN	73	75	74	74	74	75	74	73	74	74	74	75	74	73	73	73	73	75	74	75	77	74	75	75	

TOTAL NUMBER OF OBSERVATIONS = 5280   MEAN = 75.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF NON-METHANE HYDROCARBONS(UG/M**3 X 10**-1)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1																									
2	57	57	57	58	62	58	45	36		50	58	62	60	47	50	45	61	44	38	25					52
3													32	26	29	31	35	28	30	34	31	56	36	36	32
4	38	41	40	41	42	42	34	47	31	19	35	56	57	51	41	32	27	24	22	28	22				36
5								34	43	41	41	51	50	49	49	52	49	43	41	36		19			44
6																									
7	0									:	:	28	19	22	17	9	25	24							18
8	0	0	0	0	0	0	0	0	10	4	12	22	26	25	25	22	20	24	13	19	15	5	0	0	10
9	0	0	0	0	0	0	0	0	0	0	2	9		29	28	20	19	19	17	6	0	0	0	0	6
10	0	0	0	0	0	0	0	0	1	0	0	0	0:	:	:										0
11											:	:	:	:	25:	:	6	5	5	5	5	5	5	5	7
12	5	5	5	5	5	5	4	4	5	6	7	8	9	9	8	9	9	7	6	5	5	4	5	5	6
13	5	5	5	4	5	5	4	4	4	5:	6	6	8	10	9	9	9	6	5	4	4	5	4	3	6
14	3	3	4	3	4	4	4	4	5	6	4	4	6	6	5	6	5	4	4	4	2	2	4	3	4
15	3	3	3	0	0	2	2	2	4	6	7	9	9	12	13	12	11	9	11	7	7	8	8	6	6
16	7	10	8	5	6	27	5	6	8	14	26	10	12	8	5	3	4	4	10	12	8	6	7	11	9
17	6	68	111	106	109	7	7	5	6	28	30:	:	109	83	69	56	20	23	52	19	18	17	28	15	44
18	16	15	14	92	55	50	58	9	17	15	21	18	24	40	27	19	18	17	54	13	21	16	15	19	28
19	26	21	21	21	20	19	19	21	22	25	32	33	34	33	46	33									27
20																									
21									:	:			:	:											
22											:					:	:								
23														:	:	:	58:	37	31	51	56	56	57	37	35
24	41	42	40	43	41	41	38	37	39	45	40	44	45	68	45	43	39	42	48	45	40	42	42	47	43
25	40	39	44	49	34	41	44	49	38		40	42	45	41	45	39	41	37	43	39	38	44	30		41
26	36	38	43	40	43	23	31	40	43	38	44	47	38	43	42	47	44	46	54	43	30	33	39	42	41
27	44	37	42	41	41	44	42	45	51	39	47	49	46	45	50	53	59	50	41	40	42	14	47	46	45
28	51	40	46	44	45	46	44	52	44	45	45	44	48	59	54	50	53	39	35	45	56	46	49	37	46
MEAN	19	23	27	31	28	23	21	20	20	22	26	28	34	35	34	30	26	25	28	23	20	20	21	19	

TOTAL NUMBER OF OBSERVATIONS = 5284 MEAN = 26.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF CARBON MONOXIDE(UG/M**3 X 10**-1)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	26	27	27	28	28	26	27	26	27	28	23	23	23	23	25	25	24	24	24	23	24	24	24	25	25
2	24	25	25	25	26	26	27	27	29	30	30	29	28	30	28	26	23	24	26	27	26	25	26	26	26
3	26	25	25	25	27	26	26	28	58	29	29	63	28	29	27	21	13	14	12	20	12	11	13	12	25
4	11	12	11	12	12	12	11	11	12	12	13	14	26	31	27	56	29	29	28	29	29	29	30	31	22
5	31	31	32	31	32	32	33	32	33	34	34	81	36	34	33	34	34	33	33	33	32	31	32	32	35
6	32	31	32	31	31	15	15	14	15	15	16	29	32	31	30	30	30	30	29	28	28	27	26	26	26
7	14	28	27	27	28	25	28	27		:	:	41	41	40	40	39	40	40	40	38	38	37	38	38	34
8	39	36	20	39	39	38	19	41	40	40	39	39	42	44	39	41	40	39	39	39	39	38	37	43	38
9	38	36	38	18	55	37	38	37	39	39	39	39		64	41	40	40	40	38	38	37	36	37	38	38
10	38	39	39	39	38	37	39	38	40	40	40	41	41:	:	:	110									43
11											:	:	45	44	:	:	32	31	28	30	29	28	29	29	32
12	30	29	30	28	29	29	29	29	30	30	30	30	28	30	29	29	32	31	30	28	29	28	29	14	29
13	28	29	14	14	15	14	14	14	25	27:	29	29	30	27	76	27	26	27	26	26	25	24	26	55	27
14	26	28	26	26	29	29	29	28	28	69	20	19	20	11	12	23	21	20	19	19	14	20	19	21	24
15	19	20	19	20	21	22	22	23	22	75	25	23	23	25	23	23	23	23	23	23	23	23	24	22	24
16	22	21	22	21	25	25	25	24	25	25	25	26	24	24	26	25	26	29	26	26	24	25	25	25	25
17	26	27	24	24	24	25	26	28	28	28	25:	:	17	19	18	31	36	39	71	36	38	40	43	48	31
18	46	48	47	61	62	47	46	47	49	48	51	51	51	50	52	49	45	47	47	48	52	48	50	56	50
19	56	52	53	53	53	55	56	56	60	56	54	56	56	59	55	52	30								54
20					12	35	14	14	15	14	17	15	16	18	18	17	16	18	14	19	15	15	15	14	17
21									:	:			:	:											
22											:					:	:								
23														:	:	:	:								
24																									
25																									
26																									
27																									
28																									
MEAN	30	30	28	29	30	29	28	29	32	34	30	36	32	33	33	36	29	30	31	29	29	28	29	31	

TOTAL NUMBER OF OBSERVATIONS = 5234 MEAN = 31.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF OZONE(UG/M**3)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	69	70	72	73	71	71	72	74	69	64:	69	63	72	74	76	71	67	65	64	62	63	50	49	48	67
2	54	49	49	50	48	47	47	47	55	60	61	62	64	66	68:	71:	75	73	70	65	65	62	61	62	60
3	64	65	67	69	66	65	70	67	61	66	69	75	74:	76	81	83	80	77	70	72	75	75	76	77	72
4	78	77	76	77	76	74	68	73	71	71	76	78	79	77	80	80	75	70	63	61	63	65	65	65	72
5	67	68	68	73	76	76	77	80	77	73	81	85	84	85	88	88	87	82	82	79	74	74	76	74	78
6	76	76	74	75	72	72	74	72	67	64	76	80:	77:	78	80	82	84	82	78	76	76	77	77	73	76
7	75	73	70	71	72	71	70	69	64	68:	77	83	67	86	85	84	83	82	75	75	75	78	80	81	76
8	80	80	83	82	82	80	80	78	77	79	82:	85	87	87	88	88	86	82	78	77	78	77	76	77	81
9	77	79	80	78	78	77	74	74	73	75	74	77		79	79	75	78	77	74	74	72	70	72	74	76
10	74	73	74	73	71	70	69	68	65	66	68	69	74:	:		79	78	80	78	79	77	75	72	74	73
11	74	74	71	74	74	74	71	74	67	74	:	75:	75	73	74	74	73	71	71	62	63	67	66	60	71
12	62	59	64	64	58	58	63	62	60	60	65	75	78	77	75	76	76	75	73	69	69	72	69	68	68
13	68	70	70	70	71	66	67	64	64	59:	63	72	74	75	75	78	74	71	70	68	67	66	64	65	69
14	61	59	58	56	59	60	62	59	58	63:	64	71	72	76	75	77	76	75	73	72	75	72	72	74	68
15	72	70	71	75	77	68	68	74	72	77	81	80	77	77:	77	76	75	75	74	77	74	76	77	70	74
16	72	71	71	71	75	76	72	76	68	62	74	80	79	80:	72:	73	74	74	72	76	70	70	71	70	73
17	70	70	68	68	68	67	66	66	64	64	68:	:	72	74	75	77	76	74	69	70	74	77	75	77	71
18	79	75	78	76	74	74	77	75	71	70	79	82	82:	:	79	76	80	79	74	70	70	67	69	70	75
19	70	71	66	65	60	63	63	63	60	67	77	78	79	78	78	82	81	78	76	70	74	76	77	78	72
20	78	79	79	81	81	79	80	78	71	72	78	87	86	83	83	83	82	81	78	76	75	74	75	76	79
21	76	76	76	76	76	75	78	75	73:	:	73	74	72	70	70	69	71	70	69	67	65	65	64	62	71
22	59	50	52	58	61	64	66	68	68	76	75:	80	83	83	83	82	81	80	78	79	75	75	74	75	72
23	74	74	74	75	71	72	73	74	76	71	81	82	83	82:	81:	81	83	82	80	77	79	77	75	76	77
24	78	77	78	79	82	81	84	84	85	96	86:	87	87	80	83	82	79	77	72	70	66	61	59	62	78
25	62	64	63	66	67	70	70	69	65:	59	62	68	79	81	82	81	82	78	74	74	69	71	68	73	71
26	72	60	67	61	72	75	73	69	75	82	82	81	82	81	79	80	82	78	77	96	92	89	87	90	79
27	87	86	80	79	79	81	79	80	83	86	86	90	90	90	91	93	95	93	86	83	62	83	84	86	86
28	89	88	87	86	86	86	85	84	81	88	86:	86	86	85	84	84	84	80	78	79	77	78	73	75	83
MEAN	72	71	71	71	71	71	71	71	69	71	74	78	79	79	79	80	79	77	74	73	73	72	71	72	

TOTAL NUMBER OF OBSERVATIONS = 7879 MEAN = 74.

: INDICATES CALIBRATION DURING THE HOUR

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                       HOURLY TOTAL PRECIPITATION(HUNDREDTHS OF INCHES)
                        TRAILER NO. - 23  PERIOD( 2/ 1/77 TO  2/28/77)

                                                   HOUR
         1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 TOTAL
DAY

  1      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  2      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  3      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  4      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  5      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  6      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  7      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  8      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
  9      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 10      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 11      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 12      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 13      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 14      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 15      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 16      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 17      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 18      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 19      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 20      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 21      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 22      0   0   2   0   0   0   0   0   0   0   1   0   0   0   0   0   0   0   0   0   0   0   0   0     3
 23      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 24      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 25      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 26      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   1   0   0   0   0     1
 27      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
 28      0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0     0
TOTAL     0   0   2   0   0   0   0   0   0   0   1   0   0   0   0   0   0   0   0   1   0   0   0   0

                    TOTAL NUMBER OF OBSERVATIONS =  8009    TOTAL =      12.

           : INDICATES CALIBRATION DURING THE HOUR
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CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 8 FEET(MPH)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	1	2	2	1	2	2	2	1	1	1	1	3	1	1	2	4	5	5	3	1	0	0	0	0	2
2	2	3	4	3	3	3	1	1	3	4	3	2	2	4	6	5	4	4	4	2	1	2	4	3	3
3	1	1	0	0	1	0	0	1	0	1	1	2	4	3	3	5	3	2	3	3	1	1	1	1	2
4	2	1	1	0	1	1	1	0	0	1	3	4	4	5	6	6	5	3	2	2	1	0	0	1	2
5	1	0	1	0	1	1	0	1	1	0	3	5	6	6	3	2	3	2	1	1	2	1	0	0	2
6	0	1	0	1	0	1	0	0	0	1	4	4	4	5	4	5	4	1	1	2	1	0	1	0	2
7	1	0	1	0	0	0	0	0	0	1	1	2	3	4	5	4	3	1	1	2	1	1	1	0	1
8	0	2	3	2	1	2	4	3	2	2	1	2	3	2	3	4	4	5	3	2	3	3	3	2	2
9	2	2	3	2	0	1	2	1	0	0	2	4		5	6	6	5	4	1	1	1	2	2	1	2
10	1	1	1	1	0	0	1	0	0	2	1	4	5	6		4	3	3	1	0	1	1	2	1	2
11	1	1	2	2	2	1	2	2	1	2	1	6	7	10	8	9	6	3	1	2	1	0	0	1	3
12	1	1	0	1	1	1	1	0	1	1	2	4	3	4	2	2	5	6	3	1	1	1	2	2	2
13	2	2	2	2	3	2	3	3	1	1	1	2	1	4	5	6	6	3	2	1	0	0	1	1	2
14	2	2	3	3	3	1	1	0	1	1	1	5	6	10	8	8	7	2	1	1	1	1	0	1	3
15	0	0	1	1	1	1	1	1	1	3	2	3	5	4	6	5	6	3	2	3	1	0	1	2	2
16	1	0	1	1	1	1	2	1	0	1	1	2	1	1	7	9	9	8	8	8	5	3	1	3	3
17	5	3	1	0	1	1	1	1	1	1	2	5	6	6	6	8	7	3	3	3	1	1	2	2	3
18	0	2	3	1	2	2	1	1	0	2	3	5	3	5	7	6	8	6	2	2	1	2	1	0	3
19	1	1	1	1	2	2	1	1	0	2	3	5	5	4	5	7	6	3	1	3	3	0	0	1	2
20	0	0	1	0	1	1	1	1	1	1	2	4	3	4	4	5	6	7	6	3	1	1	2	2	3
21	2	2	1	3	2	4	3	2	2	2	7	11	10	9	10	11	12	7	6	16	19	15	7	5	7
22	14	11	7	5	4	1	1	2	3	3	2	3	4	3	7	1	8	4	4	6	6	7	7	5	5
23	4	4	2	1	2	2	1	0	0	2	3	3	4	6	9	9	8	8	5	3	7	4	1	5	4
24	8	7	6	6	8	7	10	6	7	10	8	6	8	9	9	9	8	3	0	1	1	0	1	1	6
25	2	4	3	4	5	5	5	6	6	7	8	7	9	11	11	12	10	6	5	1	1	1	1	0	5
26	1	1	2	0	0	0	1	1	1	6	8	7	8	5	4	2	1	1	3	4	5	1	1	2	3
27	2	2	0	1	3	3	2	1	0	1	2	1	3	3	3	5	6	2	1	2	1	3	3	4	2
28	5	4	1	2	3	3	4	2	1	4	4	6	6	5	7	8	7	6	5	8	4	2	1	2	4
MEAN	2	2	2	2	2	2	2	1	1	2	3	4	5	5	6	6	6	4	3	3	3	2	2	2	

TOTAL NUMBER OF OBSERVATIONS = 6009 MEAN = 3.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 30 FEET(MPH)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	3	3	3	2	3	4	4	2	2	2	1	4	2	2	3	5	7	7	5	2	1	1	1	1	3
2	3	5	5	5	5	5	3	2	4	6	4	3	3	5	7	7	6	7	7	5	3	4	6	5	5
3	3	4	0	1	2	0	0	2	0	1	2	3	5	4	4	6	5	3	5	4	1	2	2	1	2
4	2	1	1	1	1	1	1	1	1	1	5	4	6	7	7	8	7	6	3	5	3	0	1	2	3
5	2	0	2	0	2	4	0	2	2	1	4	7	7	8	5	3	5	4	1	2	3	2	1	1	3
6	1	1	0	1	1	2	1	0	0	1	5	5	6	7	6	6	6	4	1	2	3	0	0	0	2
7	0	0	1	1	0	0	1	0	1	2	2	2	3	6	7	6	5	3	1	3	2	2	2	0	2
8	1	2	4	3	2	5	5	4	3	3	2	2	4	3	4	5	6	6	6	3	5	5	4	4	4
9	4	3	4	3	1	3	4	2	0	0	3	5		6	8	8	7	7	2	1	3	2	3	2	3
10	2	1	2	2	2	1	1	1	0	3	2	5	7	7		6	5	5	4	0	3	2	4	1	3
11	1	2	3	3	2	2	3	3	2	2	1	8	10	13	11	12	9	5	2	2	1	1	1	2	4
12	2	1	1	2	3	1	2	1	1	3	3	4	4	5	3	3	6	9	5	2	3	2	4	5	3
13	4	4	4	3	4	4	6	5	4	2	2	3	2	5	8	7	9	6	3	2	1	1	2	4	4
14	6	5	6	4	5	2	1	2	2	2	2	6	11	13	11	16	10	4	4	5	3	2	0	1	5
15	1	1	1	1	1	2	3	4	4	5	3	4	7	6	8	7	8	6	4	5	3	0	1	4	4
16	1	0	1	2	2	1	3	1	0	1	2	2	2	2	9	12	12	11	11	11	9	6	3	5	5
17	8	5	3	0	2	2	2	2	2	2	4	7	8	8	10	11	9	5	5	5	2	2	4	4	5
18	2	3	4	4	4	3	1	2	1	3	4	6	4	7	10	8	10	9	5	5	4	3	1	1	4
19	2	2	2	2	3	2	2	2	1	3	4	6	6	5	7	9	8	6	3	4	5	1	0	1	4
20	1	0	1	0	1	1	2	1	2	2	3	6	4	5	6	7	10	10	9	6	3	2	2	4	4
21	3	3	3	6	4	7	5	3	3	3	10	14	13	12	13	14	16	16	8	23	24	20	10	7	10
22	15	15	10	8	6	2	3	4	5	5	3	5	5	5	9	10	11	7	6	6	8	10	10	8	8
23	7	7	4	2	4	4	2	1	1	2	4	4	5	9	12	12	11	10	7	6	10	6	3	8	6
24	12	9	9	8	11	10	13	9	9	14	11	9	11	12	12	11	12	7	2	2	2	1	3	3	8
25	4	5	5	6	7	7	8	8	9	10	11	10	13	16	16	17	14	9	8	2	2	2	3	1	8
26	2	2	4	2	0	0	2	2	3	6	11	10	10	8	5	3	2	2	5	6	8	3	3	4	4
27	3	5	2	3	5	4	4	2	1	2	3	2	5	4	4	7	9	5	2	4	2	5	5	7	4
28	8	7	2	4	6	6	7	5	2	5	6	8	8	7	10	10	9	9	8	11	7	4	4	4	7
MEAN	4	4	3	3	3	3	3	3	2	3	4	6	6	7	8	8	8	7	5	5	4	3	3	3	

TOTAL NUMBER OF OBSERVATIONS = 6009 MEAN = 5.

* INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 100 FEET(MPH)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
DAY																									
1	4	4	4	3	5	4	4	2	3	2	2	5	2	3	3	5	8	8	6	3	1	2	1	1	4
2	4	6	7	7	6	6	5	3	5	6	5	3	3	5	8	8	7	8	10	7	4	4	6	5	6
3	3	3	0	0	2	0	0	1	0	2	2	3	5	4	5	7	6	4	4	8	3	2	3	1	3
4	1	1	2	0	1	2	2	0	1	1	4	4	6	8	8	9	8	8	4	4	3	0	0	1	3
5	1	0	2	0	2	5	1	2	4	2	4	7	9	8	6	4	6	6	1	2	3	1	1	1	3
6	0	1	0	0	0	1	1	0	0	1	5	5	6	7	6	7	7	6	3	1	2	1	0	0	3
7	0	0	1	2	0	0	1	1	1	2	2	3	4	6	7	6	5	3	2	1	2	2	1	0	2
8	1	2	5	4	2	6	7	6	5	3	3	3	4	3	4	6	6	10	8	3	4	6	6	5	5
9	6	4	6	2	1	2	4	2	0	0	3	6		8	9	9	8	9	6	0	1	2	2	2	4
10	1	1	1	2	2	2	2	1	0	3	2	6	8	.8		7	6	7	7	0	1	1	2	1	3
11	1	1	3	2	1	2	2	3	3	2	1	9	11	15	13	13	10	7	3	3	1	1	1	2	4
12	1	1	1	4	2	1	3	2	1	4	4	5	5	6	4	3	7	10	8	2	3	2	4	5	4
13	5	4	4	2	4	5	7	6	6	2	2	3	2	6	9	8	10	8	4	2	3	2	4	6	5
14	10	7	8	5	6	3	1	2	2	2	2	7	13	15	12	11	12	6	6	7	4	3	0	2	6
15	2	1	1	0	1	3	5	7	8	6	3	4	7	7	9	8	9	7	6	8	5	1	1	2	5
16	1	1	1	3	3	0	1	1	1	1	2	2	2	2	10	13	13	15	16	16	13	9	6	6	6
17	13	10	8	3	5	2	1	1	2	1	4	8	9	9	11	12	11	6	8	8	2	3	6	7	6
18	4	3	5	5	3	3	1	2	2	3	4	7	4	8	11	9	12	11	7	6	5	1	2	0	5
19	3	2	1	0	3	1	1	1	1	4	4	7	7	5	7	11	9	8	5	5	0	1	1	1	4
20	1	0	1	0	1	1	1	1	3	1	3	6	5	5	7	6	12	13	14	10	5	5	2	3	4
21	3	5	4	10	7	11	8	4	3	3	11	16	14	14	16	17	19	12	11	27	29	23	15	9	12
22	22	19	12	10	8	3	4	6	7	6	3	6	6	6	12	12	13	8	7	9	10	11	12	9	9
23	8	8	5	4	6	6	3	1	1	2	5	4	6	10	13	14	12	13	9	8	12	8	5	12	7
24	15	12	11	11	13	11	15	11	11	16	13	10	11	13	13	15	13	8	3	2	3	3	4	4	10
25	4	7	6	7	9	10	9	9	10	11	12	11	15	18	18	19	16	11	11	4	0	1	3	1	9
26	3	1	3	1	0	2	4	3	4	9	12	11	11	9	6	4	2	3	6	8	10	5	6	5	5
27	5	7	4	5	6	6	6	3	1	3	3	3	6	4	4	6	10	6	3	7	6	8	10	12	6
28	11	10	5	6.	9	10	12	9	2	6	7	9	9	7	11	11	11	11	11	14	9	6	6	4	9
MEAN	5	4	4	4	4	4	4	3	3	4	5	6	7	8	9	9	10	8	7	6	5	4	4	4	

TOTAL NUMBER OF OBSERVATIONS = 8008 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND SPEED AT 200 FEET(MPH)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	4	3	4	7	3	3	2	4	3	1	4	2	3	4	6	4	9	8	5	1	2	1	1	4
2	4	7	8	8	6	8	6	4	6	6	5	3	3	6	8	9	8	10	13	9	5	4	6	6	7
3	3	2	1	1	1	0	0	0	0	2	2	3	5	5	6	8	6	4	4	7	4	2	2	0	3
4	0	3	3	0	1	2	3	1	1	2	4	4	7	8	9	10	6	9	5	3	2	1	1	1	4
5	1	1	2	0	0	5	2	1	2	1	5	8	9	9	6	4	6	8	2	2	2	1	1	1	3
6	0	0	0	0	1	2	2	1	1	1	5	5	7	7	7	7	7	6	4	2	2	2	1	1	3
7	1	0	1	1	0	0	0	2	2	0	2	3	4	7	8	7	5	4	2	1	1	3	0	1	2
8	1	2	4	3	2	3	6	4	3	2	3	3	4	3	5	6	7	12	9	1	1	4	5	3	4
9	3	2	4	2	1	2	1	2	0	0	2	5		8	9	9	8	9	8	2	1	3	1	1	4
10	1	1	1	2	2	2	4	3	1	4	2	5	8	9		4	6	9	9	1	0	6	2	1	3
11	0	0	3	0	1	1	1	3	4	2	1	9	12	17	15	14	11	8	4	4	5	0	0	2	5
12	0	2	2	4	1	1	3	1	2	3	4	6	5	6	4	4	8	12	11	4	4	2	3	4	4
13	3	3	3	1	4	4	5	6	6	5	2	3	3	6	10	9	11	9	5	3	5	4	7	8	5
14	12	8	9	7	7	4	1	2	2	2	2	8	14	16	13	11	13	6	6	9	7	1	1	2	7
15	2	0	0	0	2	4	8	11	10	6	3	5	8	7	9	9	10	8	6	11	7	2	1	0	5
16	1	3	2	1	1	0	1	2	4	3	2	3	2	2	11	15	15	19	21	21	19	13	12	13	8
17	18	15	13	8	11	6	4	3	5	2	4	8	10	10	11	13	12	8	11	10	1	7	8	10	9
18	6	4	5	7	4	5	3	3	4	2	4	7	4	9	11	10	12	12	7	7	5	1	0	0	6
19	3	2	1	1	2	1	1	1	2	4	5	8	7	6	8	11	10	9	7	5	10	3	1	1	5
20	3	0	3	1	1	1	2	1	2	1	3	6	5	6	7	9	13	16	19	15	11	10	5	3	6
21	4	8	8	14	9	16	10	3	2	4	12	17	15	16	17	19	20	14	14	32	33	27	16	12	14
22	25	21	14	12	9	4	6	8	8	7	4	6	7	6	13	13	15	10	9	11	13	13	14	11	11
23	10	10	7	6	6	6	4	2	2	3	5	4	6	11	14	15	14	14	11	11	15	11	9	16	9
24	18	15	14	14	15	13	18	12	12	17	13	11	12	14	14	13	14	9	4	2	3	3	4	6	11
25	5	8	7	6	10	11	10	19	11	11	13	12	16	18	19	20	17	13	12	6	1	2	3	2	10
26	3	0	3	2	0	1	3	5	6	10	13	12	13	16	7	4	3	4	7	9	13	8	8	8	6
27	7	9	7	8	7	9	8	5	1	3	3	3	6	5	5	3	11	7	3	8	9	12	15	16	7
28	12	12	9	7	12	14	17	14	4	6	7	10	9	8	11	12	12	12	14	16	16	7	7	4	10
MEAN	6	5	5	4	4	5	5	4	4	4	5	7	7	8	10	10	10	10	8	8	7	5	5	5	

TOTAL NUMBER OF OBSERVATIONS = 8007 MEAN = 7.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION AT 8 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	84	113	117	141	112	89	120	194	235	85	22	297	152	65	51	295	295	275	270	297	15	67	64	139	89
2	273	298	294	290	286	282	284	267	287	307	296	284	248	267	308	337	352	16	6	341	250	234	251	229	289
3	220	212	151	194	225	141	190	224	119	93	23	22	1	17	298	318	343	300	222	202	79	222	145	246	211
4	218	228	227	168	273	245	122	352	238	324	300	310	304	311	306	301	306	306	254	225	214	183	214	227	260
5	172	183	204	161	163	159	79	138	117	93	219	204	196	202	207	206	202	205	175	195	229	184	169	231	182
6	235	196	259	207	97	289	148	134	172	9	316	298	296	291	301	302	299	287	221	228	220	175	209	202	243
7	186	92	220	183	112	206	215	148	37	78	51	336	299	336	338	321	308	329	209	250	174	91	184	163	188
8	72	101	137	148	157	161	114	135	106	54	15	26	260	218	201	222	208	194	191	78	146	138	114	125	159
9	139	144	134	212	223	211	233	355	41	354	304	290		317	325	318	341	302	294	214	220	225	206	195	258
10	150	230	222	216	163	185	186	99	344	273	293	305	300	315		347	329	297	277	217	218	227	222	164	245
11	147	182	298	186	224	183	228	195	320	236	13	322	339	342	307	350	21	26	46	242	219	183	209	171	254
12	211	191	122	194	233	360	159	216	132	82	55	184	217	228	201	321	269	183	171	59	83	107	112	109	163
13	93	136	101	206	167	76	150	67	147	77	52	8	327	316	341	286	308	317	250	214	318	206	262	31	9
14	355	335	292	254	248	234	163	194	216	276	298	322	336	350	7	21	35	52	103	118	87	192	214	177	290
15	123	210	173	217	178	232	123	190	135	126	33	311	337	334	311	302	298	276	216	206	208	163	177	218	212
16	197	218	157	124	190	168	216	181	331	27	80	342	31	127	209	204	197	202	194	192	192	163	152	129	175
17	198	196	234	55	262	351	56	73	64	52	305	278	297	286	277	286	287	289	216	214	155	197	219	206	250
18	256	221	145	147	236	199	183	183	114	65	40	32	69	358	319	326	303	302	43	161	167	235	196	181	193
19	193	176	161	158	211	157	207	187	57	67	7	348	310	340	328	304	322	298	255	218	220	10	208	222	242
20	195	184	194	187	158	211	197	196	87	2	348	214	202	245	278	217	209	205	198	231	104	35	74	100	192
21	85	91	105	175	133	181	157	96	93	223	223	207	200	202	208	207	186	166	156	166	187	190	212	227	174
22	219	229	263	290	290	357	332	309	15	37	2	11	358	288	299	286	294	285	272	273	260	261	255	262	296
23	269	281	300	262	227	213	202	173	165	353	283	300	260	214	218	225	217	219	219	229	224	223	183	219	233
24	214	226	230	241	205	252	255	262	273	273	300	293	268	275	270	302	356	354	289	228	303	302	253	282	271
25	266	304	296	303	308	326	325	323	321	327	330	345	351	348	349	357	5	358	348	98	213	225	224	172	319
26	216	174	226	94	192	97	206	196	166	198	204	202	228	223	282	224	256	114	296	205	290	289	276	293	223
27	278	292	36	265	239	280	272	234	232	3	340	326	319	208	296	324	296	298	225	193	193	194	177	192	209
28	181	170	95	105	173	186	211	214	9	197	212	213	217	205	194	193	189	172	177	160	152	122	91	76	174
MEAN	195	197	195	192	206	205	186	185	104	26	338	307	291	291	291	292	296	279	230	209	202	194	194	192	

TOTAL NUMBER OF OBSERVATIONS = 6009 MEAN = 230.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	91	108	123	153	128	97	124	204	252	87	12	283	185	55	46	300	295	276	272	292	10	74	68	148	99
2	269	295	291	290	287	283	289	271	207	307	299	279	253	275	314	304	353	5	23	342	283	280	259	233	290
3	220	205	119	176	208	140	172	250	151	101	29	5	4	2	286	333	342	303	218	196	149	250	143	10	195
4	216	249	257	133	287	256	142	9	267	273	297	308	302	313	306	300	307	309	265	218	201	82	205	220	206
5	175	184	265	96	141	160	213	127	131	100	172	206	198	202	203	210	202	204	199	189	204	187	126	257	180
6	233	203	22	290	70	329	152	80	149	9	312	299	297	292	300	301	298	294	255	233	226	260	211	151	273
7	188	72	210	202	107	197	220	112	56	79	43	344	243	336	343	325	348	333	172	210	128	101	189	142	133
8	194	93	139	152	147	152	126	130	111	56	22	14	261	203	205	221	210	193	186	101	149	138	124	133	148
9	141	146	138	177	153	197	238	355	8	295	300	290		318	322	317	339	305	325	219	219	236	208	202	257
10	152	225	226	220	207	212	196	146	319	271	286	303	300	315		306	330	302	306	223	214	227	223	175	248
11	49	182	300	188	258	171	227	181	297	231	288	324	341	342	348	350	22	28	29	202	234	152	194	190	267
12	198	206	79	173	180	321	159	223	144	89	61	187	217	226	191	316	270	189	178	77	95	117	121	117	164
13	107	150	110	197	166	70	147	89	148	99	72	333	324	324	343	266	308	317	257	225	331	[illegible]	290	21	326
14	2	332	294	264	248	248	166	172	211	269	304	321	338	351	7	20	36	53	99	113	67	170	240	172	303
15	118	250	162	203	152	193	145	190	151	130	15	323	336	330	308	301	296	274	212	201	194	157	162	209	205
16	146	187	100	93	185	155	218	167	249	36	62	336	357	144	213	206	200	204	198	193	190	154	188	150	175
17	195	193	206	155	258	51	75	97	84	57	312	286	296	286	278	287	286	255	214	204	149	196	219	205	223
18	256	251	143	142	211	202	184	179	137	61	11	32	69	354	319	326	303	301	41	152	176	226	204	147	180
19	157	160	168	149	219	147	195	186	67	70	7	346	308	311	317	305	322	299	267	211	206	306	145	239	234
20	166	173	186	182	173	235	213	187	103	9	346	215	229	245	277	219	209	207	199	201	191	165	106	108	194
21	114	127	153	166	155	188	165	107	101	233	224	209	200	204	211	208	189	166	162	188	190	193	215	229	181
22	221	236	262	287	286	334	332	287	252	36	1	351	272	285	298	285	292	282	271	273	267	262	257	264	284
23	260	277	292	265	252	211	204	175	175	347	279	297	272	215	217	223	217	218	220	231	231	224	190	220	234
24	216	226	231	240	265	250	253	261	271	270	295	292	269	274	270	299	355	357	298	229	312	322	261	281	272
25	267	301	295	300	308	323	323	316	318	326	328	345	353	348	350	352	4	358	347	73	197	225	222	190	318
26	211	162	222	84	191	108	178	177	173	199	206	206	229	224	262	240	223	115	269	268	292	292	261	286	218
27	279	263	342	283	242	280	274	243	234	6	338	323	318	267	306	323	296	297	232	195	193	198	192	193	272
28	181	178	133	133	172	178	197	202	43	200	215	214	219	208	196	195	192	173	181	182	160	125	98	86	175
MEAN	190	198	191	189	200	200	191	177	164	30	333	304	285	289	291	291	294	281	235	207	206	197	193	189	

TOTAL NUMBER OF OBSERVATIONS = 669 MEAN = 229.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION AT 100 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	112	126	135	163	165	111	125	226	274	76	25	289	182	63	48	314	302	286	284	302	10	82	72	133	101
2	282	302	298	296	294	291	300	287	294	313	307	292	256	291	322	339	360	11	3	360	297	286	271	270	304
3	256	236	122	81	217	261	95	177	146	102	17	10	16	6	319	329	349	323	247	200	175	282	121	250	270
4	257	351	300	99	332	309	219	355	285	256	302	309	310	320	312	307	312	322	306	242	233	12	43	226	302
5	202	108	187	72	107	155	213	126	123	108	198	211	205	208	214	219	204	209	196	170	179	231	55	345	176
6	293	199	344	293	58	356	200	78	90	339	321	312	304	300	308	310	306	309	337	302	276	264	349	109	316
7	143	343	317	247	95	42	265	13	47	88	49	340	302	343	303	330	355	342	115	179	37	152	296	139	8
8	302	56	100	147	136	150	128	136	125	69	26	17	270	231	222	227	214	198	191	116	155	101	129	134	151
9	140	133	131	189	42	159	258	4	5	8	306	297		326	328	320	305	318	350	80	243	290	239	242	314
10	197	290	263	252	247	245	232	218	308	277	294	307	305	321		355	341	315	334	12	256	257	256	221	279
11	71	51	308	232	28	190	310	175	147	223	343	332	347	350	356	358	28	37	29	319	327	190	201	215	345
12	130	254	178	171	140	332	128	261	45	104	71	192	217	246	209	315	275	193	190	115	127	130	137	138	169
13	116	140	106	205	172	121	141	122	157	184	94	335	347	322	348	292	317	324	286	265	341	6	337	17	355
14	11	350	315	302	270	288	153	144	213	271	306	327	345	357	14	27	42	55	97	107	82	130	3	197	0
15	191	204	125	177	128	174	169	181	162	141	110	329	345	339	317	310	304	286	224	210	222	184	179	233	208
16	192	193	123	63	168	259	255	110	181	90	86	335	10	153	216	211	205	209	202	194	196	192	201	162	185
17	194	192	195	193	199	249	167	136	166	71	304	292	302	291	286	293	292	206	231	223	222	222	244	222	232
18	208	275	126	132	167	207	158	200	179	76	58	40	63	5	327	332	310	307	44	142	155	217	252	150	163
19	126	128	37	26	232	137	176	135	94	86	4	351	311	327	323	310	329	306	296	220	202	220	135	47	354
20	158	34	192	100	189	274	281	179	93	41	1	219	244	246	285	221	214	212	204	199	201	179	176	136	201
21	165	176	200	192	179	194	173	126	112	239	229	213	204	209	216	211	192	170	169	192	194	197	219	234	192
22	225	234	267	291	290	356	330	304	11	41	6	357	279	293	304	293	299	289	280	281	277	270	264	271	296
23	275	282	294	281	267	239	243	211	194	339	288	308	260	220	220	220	222	222	226	238	238	229	210	227	246
24	222	230	238	247	270	256	260	267	275	273	298	296	275	286	276	303	360	3	318	265	360	354	296	302	265
25	282	313	305	311	319	332	330	326	326	331	334	350	359	353	356	1	8	3	355	51	129	273	259	252	330
26	249	102	273	123	81	84	162	180	181	201	210	211	235	229	288	251	221	125	267	276	300	304	294	283	227
27	287	293	338	322	267	292	287	287	296	15	350	333	329	296	287	326	301	304	268	199	202	205	200	201	289
28	188	187	185	174	179	182	196	197	165	204	220	219	221	213	200	200	196	176	185	180	171	127	111	101	184
MEAN	208	232	222	201	193	234	208	182	156	59	341	310	294	297	297	298	301	292	265	215	219	215	225	208	

TOTAL NUMBER OF OBSERVATIONS = 6007 MEAN = 256.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF WIND DIRECTION AT 200 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	152	171	155	176	187	143	137	255	262	37	14	292	263	60	43	315	304	290	292	305	350	65	40	265	280
2	297	314	310	309	303	303	312	304	305	317	311	299	283	291	318	1	357	9	15	3	355	312	289	284	316
3	276	261	224	132	198	319	81	121	122	117	29	21	13	5	324	317	347	328	283	204	162	234	110	208	285
4	183	352	263	34	67	307	261	292	267	272	302	308	312	315	312	306	313	327	331	274	264	167	102	184	296
5	182	134	220	243	114	168	238	154	126	122	221	215	211	212	215	220	207	216	170	173	154	275	237	355	194
6	322	279	346	279	259	273	252	214	193	287	320	313	303	299	309	310	304	312	341	356	334	290	253	220	292
7	222	348	360	270	233	154	356	353	1	80	41	342	307	343	343	331	357	343	84	149	144	216	269	198	334
8	292	12	138	137	112	159	138	155	141	91	27	18	257	230	226	230	217	203	203	50	168	149	134	134	158
9	159	138	132	182	107	141	313	5	332	2	308	302		325	326	321	344	324	348	359	314	309	287	278	325
10	257	296	287	279	279	271	255	251	274	277	264	310	308	319		355	359	320	338	356	55	41	299	250	300
11	234	101	304	303	53	254	278	160	131	209	21	329	344	348	353	357	25	37	26	317	300	256	256	245	324
12	151	261	234	194	190	294	113	227	244	125	82	200	233	249	217	314	276	199	205	218	171	169	173	147	204
13	253	142	336	226	190	180	141	174	171	203	159	336	340	326	347	293	317	324	302	288	327	4	351	7	290
14	9	350	329	324	288	298	86	129	187	270	304	326	345	356	12	25	39	51	90	97	76	90	79	169	18
15	198	317	251	254	156	163	171	170	165	147	111	334	342	344	315	301	302	287	236	221	240	241	192	246	257
16	238	213	202	50	158	283	333	152	148	128	98	343	301	210	222	217	211	214	210	201	204	207	215	203	206
17	204	202	202	208	208	208	198	202	209	203	301	290	301	294	266	292	292	268	245	240	236	248	261	233	241
18	274	279	131	122	139	200	197	230	206	117	65	38	64	4	325	331	311	306	39	130	140	61	287	125	113
19	112	92	21	4	244	211	214	127	145	107	17	348	324	326	325	308	328	304	306	241	215	213	183	63	302
20	204	172	200	181	253	268	309	30	96	78	329	225	243	253	264	224	217	214	210	207	204	206	203	191	219
21	207	198	213	201	197	203	191	175	171	236	231	215	206	213	218	213	194	175	181	197	149	201	221	235	203
22	229	236	272	295	291	331	324	306	5	37	1	354	211	293	304	293	297	288	282	284	241	272	266	273	295
23	275	281	286	287	284	261	257	245	216	314	288	301	278	223	224	228	220	225	229	242	241	251	225	224	253
24	224	233	203	253	276	262	265	274	281	277	302	299	280	283	278	306	303	2	331	306	352	1	316	319	292
25	295	321	313	317	324	330	330	327	325	330	334	349	359	353	356	1	7	2	356	31	44	308	285	291	336
26	261	262	283	221	88	91	149	186	187	205	215	216	260	238	295	259	227	140	270	274	302	306	295	279	241
27	285	292	332	335	286	298	295	322	5	10	348	341	322	295	307	326	300	306	286	206	219	211	210	211	290
28	196	190	193	197	190	190	203	207	196	205	223	220	221	218	203	202	198	178	189	194	164	142	125	115	192
MEAN	232	254	261	247	212	240	239	214	199	171	334	311	293	296	299	299	301	293	283	250	233	238	241	230	

TOTAL NUMBER OF OBSERVATIONS = 668 MEAN = 266.

: INDICATES CALIBRATION DURING THE HOUR

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            DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 8 FEET
                      TRAILER NO. - 23  PERIOD( 2/ 1/77 TO  2/28/77)

                                            HOUR
        1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
 DAY

  1    20  11  10  19  15  14  13  15  25  25  32  21  35  30  31  22  13  12  13  13  13  11  13  14   18
  2    13  13  13  11  13  13  11  12  13  15  16  22  26  34  31  25  31  22  23  26  15  11  10  11   17
  3    10  17  21  16  10  17  14  12  18  24  33  44  47  24  55                                        23
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 MEAN  14  14  15  15  13  14  13  13  18  21  27  28  36  29  58  22  21  16  17  20  14  11  12  12

                      TOTAL NUMBER OF OBSERVATIONS =    709     MEAN  =      19.

             : INDICATES CALIBRATION DURING THE HOUR
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                DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 50 FEET
                      TRAILER NO. - 23  PERIOD( 2/ 1/77 TO  2/28/77)

                                                     HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24 MEAN
DAY

 1       17   8   8  20  14  10  10  13  18  17  25  18  29  32  25  13  12  16  10  11  12   9  11  10    15
 2       11   9   9   9  10  10  10  10  11  10  14  17  22  29  23  14  20  10  45  15  14  11   9   9    14
 3        8  15  17  12  10  21  10  15  18  25  32  49  51  25  56                                         23
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MEAN     12  11  11  13  11  14  10  13  15  17  23  27  33  29  33  13  15  10  23  13  13  10  10  10

                     TOTAL NUMBER OF OBSERVATIONS =   769     MEAN  =     17.

          : INDICATES CALIBRATION DURING THE HOUR
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DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 100 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	14	11	9	14	15	11	10	14	13	16	26	17	22	29	20	21	11	10	9	11	10	9	12	12	14
2	11	10	9	9	11	10	10	10	9	10	12	17	19	19	21	36	23	25	13	21	17	11	9	10	14
3	11	13	14	13	17	14	11	18	18	18	34	41	41	24	36										21
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MEAN	12	11	11	12	14	12	10	14	13	14	24	25	27	24	25	28	15	17	11	16	13	10	11	11	

TOTAL NUMBER OF OBSERVATIONS = 715 MEAN = 16.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF WIND DIRECTION STANDARD DEVIATION AT 200 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	13	11	11	12	12	23	15	17	12	15	25	21	27	28	24	12	10	9	9	11	12	8	26	13	16
2	11	9	9	10	9	10	9	10	10	10	11	14	19	18	22	30	28	18	24	21	21	16	10	8	14
3	9	11	11	11	9	12	9	12	17	21	40	48	25	28	35										19
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MEAN	11	10	10	11	10	15	11	13	13	15	25	27	24	24	26	19	19	14	16	16	16	11	18	11	

TOTAL NUMBER OF OBSERVATIONS = 712 MEAN = 16.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 30 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	16	9	9	20	16	11	10	13	16	17	15	28	25	20	21	19	12	10	11	18	12	8	10	11	15
2	10	10	10	10	10	10	8	9	10	25	16	16	22	40	17	33	16	10	8	14	17	12	10	9	14
3	8	15	14	11	14	23	8	13	15	19	25	28	29	27											18
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28																									
MEAN	11	11	11	13	13	15	9	12	13	20	19	24	25	26	19	26	14	10	9	16	15	10	10	10	

TOTAL NUMBER OF OBSERVATIONS = 697 MEAN = 15.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 100 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	12	11	7	14	14	11	10	14	12	24	20	18	18	29	19	11	10	10	9	9	9	8	11	11	13
2	11	11	9	9	10	10	10	11	9	11	12	17	19	18	12	12	22	48	6	12	13	12	9	10	13
3	11	11	14	10	11	14	15	19	20	18	53			33	18										18
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MEAN	11	11	10	11	12	11	12	15	14	18	26	17	18	26	16	11	16	28	9	10	12	10	10	11	

TOTAL NUMBER OF OBSERVATIONS = 710 MEAN = 15.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL WIND DIRECTION STANDARD DEVIATION AT 200 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

											HOUR														
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	11	10	10	10	12	20	13	16	11	13	16	19	24	25	21	12	11	8	8	10	27	16	19	16	15
2	13	9	9	8	9	9	9	9	8	10	11	16	18	17	13	13	38	34	9	16	14	13	9	9	13
3	7	10	12	9	8	17	9	12	13	18	25	27	47	28	20										16
4																									
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27																									
28																									
MEAN	11	10	10	9	10	15	11	12	11	14	17	19	27	23	17	12	23	19	8	13	20	14	14	11	

TOTAL NUMBER OF OBSERVATIONS = 710 MEAN = 15.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF RELATIVE HUMIDITY AT 8 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	59	59	58	56	57	59	58	56	57	59	59	64	77	85	79	81	85	91	95	96	96	98	99	99	74
2	99	99	100	100	100	99	99	98	97	95	94	92	88	82	79	76	73	72	70	71	73	77	82	84	87
3	85	87	86	87	89	91	90	90	91	82	75	68	61	58	56	55	56	58	64	70	71	72	72	72	75
4	72	73	75	76	78	81	82	81	81	77	71	67	62	56	55	54	55	58	60	65	66	65	67	68	69
5	69	66	71	68	66	65	66	64	65	64	59	56	54	53	52	52	52	55	58	62	66	68	66	68	62
6	68	70	72	73	75	76	78	79	78	76	69	62	58	55	53	50	45	49	52	55	58	58	59	62	64
7	63	64	66	70	70	71	75	76	75	68	61	52	44	41	46	40	39	38	41	46	46	47	49	51	56
8	54	57	57	55	56	56	57	57	55	51	45	40	36	34	35	36	37	40	45	47	47	47	48	48	48
9	47	46	46	49	49	51	53	54	51	47	45	43		37	36	36	36	34	36	38	40	43	44	46	44
10	46	49	51	51	51	50	51	50	50	48	46	44	43	42		40	46	40	41	43	46	49	52	53	47
11	55	56	58	59	59	62	64	65	62	59	56	52	51	55	67	65	70	70	72	77	80	81	83	88	65
12	90	91	92	91	91	90	89	87	86	80	71	58	51	48	49	48	48	54	59	63	64	63	65	66	71
13	65	66	67	69	69	70	70	73	71	68	64	57	53	49	48	46	47	49	51	53	54	57	59	64	60
14	68	74	78	84	91	94	95	95	93	88	84	76	70	66	65	65	69	73	75	78	78	77	78	78	79
15	78	80	80	78	76	78	78	73	71	62	55	51	49	49	48	47	47	48	52	54	55	56	56	60	62
16	61	62	63	65	64	64	67	65	64	61	52	48	45	43	42	40	45	47	48	49	50	51	51	51	54
17	51	52	52	53	53	54	56	56	55	51	45	42	41	40	39	39	41	43	47	50	50	50	52	53	49
18	52	55	55	55	56	57	55	55	53	50	45	42	40	40	40	41	40	39	42	48	51	54	55	55	49
19	56	57	60	63	67	67	69	70	66	59	51	48	46	45	44	42	42	43	44	48	53	52	52	52	54
20	52	51	51	50	51	52	52	52	52	49	44	39	38	36	33	36	37	39	41	42	40	39	41	40	44
21	40	40	39	40	41	40	40	41	40	37	36	35	36	35	36	37	36	37	37	38	39	39	40	42	38
22	50	78	98	99	99	99	98	94	94	98	99	99	99	94	87	65	85	89	92	93	93	87	89	88	91
23	88	88	90	89	91	92	91	88	85	80	72	67	63	62	61	59	57	58	61	64	71	79	79	74	75
24	71	73	71	70	69	74	79	75	69	65	63	60	54	51	48	48	65	70	74	76	79	80	83	87	69
25	92	96	97	98	98	95	91	95	93	92	89	83	73	70	66	67	69	69	68	71	76	80	82	81	83
26	81	82	85	86	84	84	85	85	79	66	63	61	61	67	86	90	92	88	91	95	95	95	90	86	85
27	86	86	88	90	95	96	97	96	94	87	82	76	68	64	58	57	55	53	57	64	66	65	64	63	75
28	62	62	64	65	65	66	67	66	64	61	59	58	57	56	56	56	56	58	60	60	62	62	64	65	61
MEAN	66	69	70	71	72	73	73	73	71	67	63	58	56	54	54	53	54	56	58	61	63	64	65	60	

TOTAL NUMBER OF OBSERVATIONS = 6008 MEAN = 64.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF RELATIVE HUMIDITY AT 30 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1																									
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MEAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

CORPORATION

DIURNAL VARIATION OF RELATIVE HUMIDITY AT 100 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	62	61	60	59	60	62	60	60	60	63	66	72	86	95	89	91	95	99	100	100	100	100	100	100	79
2	100	100	100	100	100	100	100	100	100	100	100	100	99	95	91	87	82	78	75	76	76	81	84	86	92
3	87	88	90	91	92	94	94	94	96	92	85	77	70	67	64	63	64	65	67	71	75	76	77	75	80
4	72	79	82	82	84	86	87	88	88	86	81	77	71	67	64	62	63	63	65	67	68	70	71	71	75
5	72	71	71	71	69	69	70	69	69	68	66	64	63	62	60	60	60	62	64	66	67	70	71	72	67
6	73	74	76	78	81	83	85	86	86	85	79	72	68	64	61	58	56	55	55	57	59	62	64	65	70
7	66	69	71	75	76	76	78	82	82	77	70	60	53	48	47	46	45	45	46	48	49	51	54	55	61
8	50	62	61	59	60	60	61	61	60	58	53	48	43	41	41	43	45	47	50	51	51	51	51	51	53
9	51	51	51	52	52	52	54	58	58	55	53	51		45	43	43	42	40	43	45	47	47	44	51	49
10	54	55	56	56	56	56	56	56	56	57	55	53	52	51		48	47	47	47	50	51	53	56	57	53
11	59	59	62	64	64	66	68	69	68	68	66	62	61	63	75	76	82	80	82	85	88	90	90	92	72
12	92	95	97	94	90	91	90	89	89	84	79	68	60	57	56	56	56	62	66	68	68	68	69	69	76
13	69	69	70	70	70	73	73	74	74	69	67	64	61	56	55	54	53	54	55	58	60	62	66	70	65
14	74	81	87	94	99	100	100	100	100	100	97	88	82	77	75	76	79	83	84	84	85	82	82	82	87
15	82	83	83	82	80	77	77	73	71	68	64	60	57	57	56	55	55	55	57	59	59	61	61	61	66
16	63	64	64	66	66	66	68	68	68	66	60	55	53	50	49	51	52	53	55	55	55	56	57	57	59
17	56	56	56	57	57	58	59	59	59	58	52	48	47	46	45	45	47	49	50	53	54	55	55	57	53
18	58	59	59	60	59	58	58	57	56	56	52	48	47	46	47	47	46	45	48	53	55	56	58	58	54
19	59	60	62	65	68	70	70	70	71	67	59	55	54	53	51	48	48	49	50	51	53	56	56	55	58
20	55	54	53	54	55	55	56	56	55	55	50	45	44	41	38	41	42	44	46	45	46	45	44	45	48
21	44	43	43	44	45	45	45	45	44	43	41	41	41	41	41	42	41	42	43	43	44	45	46	46	43
22	56	83	100	100	100	100	100	100	100	100	100	100	100	100	96	90	92	97	99	100	100	99	98	98	96
23	98	97	98	97	97	98	97	94	92	90	82	77	71	69	64	65	64	64	67	71	78	88	86	80	83
24	79	81	79	77	77	82	88	85	79	74	72	70	63	59	55	55	71	79	87	85	86	87	91	98	77
25	100	100	100	100	100	100	100	100	100	100	100	97	65	81	79	77	80	78	76	78	85	84	85	85	90
26	84	85	87	89	89	89	89	85	86	76	75	73	73	79	95	100	100	99	99	100	100	100	98	95	89
27	94	95	95	98	100	100	100	100	100	99	96	89	80	74	68	65	61	60	60	67	70	70	70	68	82
28	66	65	67	67	68	69	69	70	71	69	68	66	65	64	64	63	63	64	65	64	65	68	70	71	67
MEAN	71	73	74	75	75	76	77	77	76	74	71	67	64	63	62	61	62	63	64	66	68	69	70	70	

TOTAL NUMBER OF OBSERVATIONS = 8004 MEAN = 70.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARAITON OF RELATIVE HUMIDITY AT 200 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	58	57	57	56	56	57	57	56	57	63	62	66	82	93	86	88	93	91	94	95	95	96	98	99	76
2	99	94	100	100	99	99	99	97	96	98	96	94	89	93	88	83	78	73	69	70	73	76	79	81	89
3	82	83	85	86	86	89	89	89	90	87	81	73	66	63	60	60	61	61	62	66	67	69	70	69	75
4	67	74	78	78	78	81	82	83	83	82	77	73	67	63	60	58	59	60	61	63	64	65	65	65	70
5	66	66	65	66	64	63	64	64	64	63	62	60	60	58	57	57	57	58	61	63	64	65	66	67	63
6	69	71	71	73	75	78	80	81	81	80	75	64	64	60	58	54	52	52	52	54	55	58	60	61	66
7	63	64	65	70	72	71	71	74	75	70	66	56	49	45	45	44	43	43	45	46	46	44	51	52	57
8	56	58	57	55	54	55	56	55	55	54	50	46	41	41	41	43	44	46	48	48	48	46	47	48	50
9	47	47	48	48	48	48	50	51	52	51	49	48		43	42	41	41	40	42	44	45	45	46	48	46
10	51	53	52	52	51	51	51	51	53	54	52	51	50	50		47	46	46	46	49	50	51	53	55	51
11	56	57	58	56	61	63	65	65	64	66	61	58	57	59	73	73	80	78	80	82	86	87	87	88	69
12	91	93	95	91	86	87	86	84	81	76	76	64	58	55	56	55	55	61	64	66	66	66	66	65	73
13	66	66	66	67	67	69	70	70	69	64	64	62	59	55	55	53	52	53	54	57	58	61	66	69	62
14	69	77	84	91	95	98	98	97	96	93	95	84	77	71	70	71	75	78	79	81	80	76	77	75	83
15	77	79	78	77	74	71	68	64	63	63	59	56	55	55	54	53	53	53	55	56	56	58	58	58	62
16	59	60	61	62	62	62	63	63	62	57	55	53	51	48	48	50	51	52	53	53	52	53	53	53	56
17	52	52	52	54	53	54	56	56	55	54	50	47	46	46	44	44	46	48	49	50	52	53	53	54	51
18	55	56	56	56	55	54	55	54	53	53	50	47	46	46	46	46	45	44	47	53	54	54	56	56	51
19	57	59	61	63	64	66	67	66	65	63	57	54	53	52	50	48	48	48	49	50	52	53	53	52	56
20	51	51	51	50	51	50	52	52	51	52	48	44	40	38	35	39	40	41	45	43	42	42	43	44	46
21	43	41	41	42	43	43	44	43	43	42	38	38	38	38	38	40	38	39	40	40	41	42	43	45	41
22	51	83	93	95	94	93	87	81	82	91	95	96	96	89	89	85	85	91	95	97	97	92	91	91	89
23	94	93	93	91	91	91	91	88	85	84	76	70	65	64	62	59	58	59	62	66	76	66	63	75	78
24	74	77	73	72	72	79	86	81	74	67	66	64	57	52	46	50	68	75	77	77	80	82	87	95	72
25	91	94	95	97	96	91	94	99	97	97	93	93	79	75	74	72	75	73	69	73	77	78	78	77	85
26	76	78	79	82	83	83	82	78	78	69	67	67	68	75	86	92	93	88	86	97	95	93	92	87.	82
27	87	85	87	87	96	97	98	98	90	90	70	84	75	68	62	57	55	54	54	61	61	62	62	60	76
28	59	59	60	61	61	61	61	62	65	64	63	62	61	59	60	60	59	60	60	59	61	63	65	66	61
MEAN	67	69	70	71	71	72	72	71	71	69	67	63	61	59	57	56	59	59	61	63	64	65	66	66	

TOTAL NUMBER OF OBSERVATIONS = 8008 MEAN = 66.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF TEMPERATURE AT 8 FEET(DEG F)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	27	28	28	29	29	28	28	29	29	29	31	30	28	29	31	32	32	27	26	26	26	25	25	24	28
2	25	24	23	23	23	22	21	20	21	22	22	24	26	29	31	31	31	31	29	26	23	21	17	16	24
3	15	14	16	14	12	13	13	12	15	21	26	30	32	34	36	36	35	32	26	25	25	24	24	23	23
4	21	20	20	19	18	17	15	17	19	23	26	29	33	35	36	36	34	31	28	24	23	24	22	21	25
5	22	22	19	23	25	24	24	26	25	30	35	37	37	38	39	39	37	34	32	27	25	25	26	24	29
6	23	22	22	20	19	19	19	18	20	24	28	30	33	35	36	37	37	34	28	25	24	24	23	21	26
7	22	20	17	19	18	18	15	16	19	25	31	34	37	38	39	40	38	36	29	25	26	26	25	25	27
8	25	24	26	25	24	24	22	22	26	32	37	40	43	44	44	45	44	39	32	31	29	28	26	26	32
9	26	27	26	24	23	20	19	19	23	30	34	36		41	42	42	41	37	34	30	28	27	25	25	29
10	25	23	23	22	21	21	21	21	24	28	32	35	39	41		41	42	38	34	32	27	26	24	26	29
11	25	24	23	24	23	23	19	20	24	30	33	37	38	36	33	35	33	32	30	25	25	25	23	21	27
12	21	19	22	20	18	18	20	19	21	28	35	38	41	42	42	43	43	37	34	30	30	31	30	29	30
13	30	29	28	27	27	26	26	25	27	31	35	38	41	43	44	44	43	41	37	35	34	32	31	30	33
14	29	29	26	24	23	23	24	23	27	28	30	33	35	36	36	35	34	31	28	26	25	23	22	20	28
15	21	18	20	21	22	20	20	22	25	33	37	40	42	44	46	46	45	42	37	36	35	35	34	29	32
16	30	29	29	28	29	28	25	28	31	35	40	43	45	47	50	49	47	44	40	39	37	36	36	35	37
17	36	35	33	32	33	32	31	31	35	41	46	48	49	49	50	49	48	44	38	35	37	37	35	35	39
18	36	31	33	32	28	27	29	29	35	39	44	46	46	47	48	47	47	45	41	36	33	31	31	30	37
19	30	30	28	27	23	26	24	24	30	38	41	43	45	46	47	48	47	44	40	34	33	35	34	33	35
20	32	33	32	32	30	28	27	29	33	41	46	49	51	52	54	54	52	48	42	36	37	36	35	35	39
21	34	33	34	36	36	35	37	35	39	46	49	51	52	50	50	50	48	46	43	45	45	45	45	44	43
22	45	37	32	31	30	28	26	25	25	23	23	25	24	26	27	26	26	25	24	23	23	23	22	21	27
23	21	20	18	17	15	14	14	16	20	22	26	28	30	31	32	31	31	29	27	25	25	24	23	24	24
24	26	26	27	26	26	25	24	24	25	26	26	28	29	31	31	30	27	24	23	21	20	20	19	18	25
25	18	18	18	17	17	16	16	15	15	17	20	21	24	25	25	25	24	23	21	18	12	12	10	12	18
26	11	10	6	8	9	9	7	7	17	22	23	24	23	23	20	21	22	22	20	19	14	17	16	14	16
27	14	12	10	11	12	12	12	12	15	17	20	21	22	25	25	27	26	24	23	22	22	21	19	19	18
28	21	19	16	16	16	15	15	17	23	28	31	32	33	34	35	35	33	32	30	29	27	27	25	25	26
MEAN	25	24	23	23	22	22	21	21	25	29	32	35	36	38	38	38	37	35	31	29	28	27	26	25	

TOTAL NUMBER OF OBSERVATIONS = 8009 MEAN = 29.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF TEMPERATURE AT 30 FEET(DEG F)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	27	28	29	30	29	28	28	29	29	28	30	28	26	28	30	30	30	26	25	25	21	23	23	23	27
2	24	22	22	21	21	20	19	18	18	19	19	21	24	27	28	29	29	29	27	25	23	21	18	17	22
3	16	17	15	15	15	12	13	12	12	19	24	28	30	32	34	35	34	33	29	26	25	24	24	23	23
4	21	21	20	19	18	16	16	16	18	21	24	27	30	32	33	34	33	31	29	27	26	25	24	23	24
5	22	23	22	23	25	25	25	26	25	28	33	35	36	36	37	36	37	34	32	30	28	26	26	25	29
6	25	23	22	21	18	19	18	17	19	22	26	26	31	33	34	35	35	34	32	30	27	24	24	23	26
7	22	20	19	18	17	18	16	15	17	23	29	33	36	37	38	37	38	36	34	32	28	28	27	27	27
8	25	25	26	25	25	25	22	22	24	30	37	40	42	43	44	44	43	39	34	31	30	29	26	26	31
9	26	27	27	28	25	24	20	18	21	28	32	34		40	40	41	40	38	35	33	31	28	28	27	30
10	26	24	24	23	22	22	21	21	22	26	30	33	36	39		41	41	39	36	33	32	31	27	27	29
11	26	25	24	23	24	23	21	22	23	27	32	36	36	34	31	33	31	31	30	27	26	26	26	23	27
12	23	20	21	22	19	19	20	19	20	26	33	36	39	41	41	43	42	37	34	31	30	31	29	30	29
13	30	30	29	29	29	27	27	25	27	31	34	37	40	42	43	43	43	42	39	37	34	33	32	31	34
14	29	29	26	24	22	22	23	23	24	26	28	31	32	34	34	33	31	29	27	26	25	24	23	22	27
15	21	19	20	22	23	22	21	23	24	31	35	39	41	42	44	45	44	42	38	37	36	36	36	35	32
16	32	31	31	30	31	30	27	29	30	34	39	42	44	47	49	48	47	44	40	39	38	37	36	36	37
17	37	37	35	34	34	33	33	33	34	40	45	47	48	48	49	48	47	45	40	38	39	39	37	36	40
18	36	34	34	33	30	30	31	30	34	38	43	44	46	46	47	46	46	45	42	39	37	34	32	32	38
19	33	33	31	29	26	27	26	26	28	35	39	41	43	45	46	47	46	45	42	39	36	36	36	36	36
20	34	34	34	33	32	30	29	30	32	40	45	48	50	51	53	52	52	48	43	40	39	39	38	37	40
21	37	37	37	36	36	37	38	36	39	45	48	49	50	49	49	50	48	46	44	45	45	45	45	45	43
22	44	36	31	29	28	26	26	24	23	21	22	22	21	23	25	26	24	23	22	21	21	21	20	20	25
23	19	18	17	16	15	14	14	15	18	21	24	25	27	28	29	29	29	28	25	24	23	23	22	23	22
24	25	25	25	24	24	23	22	21	22	23	23	25	27	28	24	24	24	23	22	21	20	19	17	17	23
25	16	16	15	15	14	14	13	12	12	13	15	17	21	21	22	22	21	20	19	17	15	14	12	11	16
26	10	10	8	8	9	8	9	8	14	18	19	20	29	20	16	19	19	20	18	16	16	16	14	13	15
27	12	11	9	9	9	9	9	9	11	15	16	19	21	22	23	25	25	24	23	22	21	20	18	18	17
28	20	19	17	16	16	15	15	17	21	26	28	30	31	32	33	33	33	31	30	29	27	26	25	25	25
MEAN	26	25	24	23	23	22	22	21	23	27	30	33	35	36	36	37	36	34	32	30	29	26	27	26	

TOTAL NUMBER OF OBSERVATIONS = 1008 MEAN = 29.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF TEMPERATURE AT 100 FEET(DEG F)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	28	30	30	31	31	30	31	30	30	28	29	27	25	26	28	29	28	25	25	25	25	23	24	23	28
2	24	23	22	22	21	20	18	18	18	18	18	20	23	25	26	28	28	28	27	25	23	21	19	18	22
3	17	17	16	15	15	14	14	14	13	18	23	26	30	32	33	34	34	33	31	29	27	26	26	26	23
4	21	21	21	20	20	17	18	18	18	21	23	27	29	31	33	33	33	31	30	29	25	26	26	25	25
5	24	25	25	26	27	27	27	27	28	29	33	34	35	36	37	37	36	35	33	31	30	28	28	26	30
6	25	24	23	21	19	19	18	18	19	21	25	24	29	31	34	35	35	34	33	31	29	26	25	25	26
7	24	23	20	19	19	19	19	15	18	23	29	32	35	36	37	38	37	36	34	34	31	30	29	29	28
8	27	26	27	27	26	26	25	25	25	29	36	39	41	42	43	43	42	40	35	33	33	31	30	30	33
9	30	28	27	29	27	27	24	19	22	27	30	33		39	39	40	40	38	36	33	32	31	29	28	31
10	27	26	25	24	24	23	23	22	22	25	29	32	35	38		40	40	39	37	34	33	32	29	29	30
11	29	28	26	24	27	25	23	24	25	27	32	34	35	34	31	33	31	31	31	28	26	26	27	25	28
12	25	23	22	23	23	22	22	21	22	27	32	35	38	40	40	41	41	37	34	32	32	32	31	32	30
13	32	32	32	31	32	29	29	28	29	33	34	37	39	41	42	42	42	42	39	37	35	34	33	32	35
14	31	28	26	23	22	22	23	23	23	25	28	30	31	33	33	33	31	29	28	27	25	26	24	23	27
15	22	21	22	22	23	24	23	25	25	29	34	37	40	41	43	44	44	42	39	38	38	36	36	36	33
16	34	34	33	32	33	32	30	31	32	35	39	41	43	46	48	47	46	43	41	39	39	36	37	37	38
17	38	38	37	35	36	35	35	35	36	40	44	46	46	47	47	47	46	45	42	40	40	40	39	38	40
18	37	36	35	34	33	32	33	32	35	38	42	43	45	45	45	45	45	45	42	39	39	36	34	33	38
19	35	34	33	31	29	29	29	29	29	35	38	40	42	44	45	46	45	45	43	41	39	37	37	38	37
20	36	36	36	35	34	33	31	32	33	39	44	47	49	50	51	51	50	48	44	42	41	40	40	39	41
21	39	39	38	38	38	38	39	38	40	44	47	48	48	48	48	49	47	45	44	45	45	45	45	45	43
22	44	36	30	29	28	26	26	24	24	21	20	21	20	22	24	25	24	23	22	21	21	21	21	20	25
23	19	17	16	16	16	15	15	15	17	20	23	25	26	28	29	29	29	27	26	25	24	23	23	24	22
24	25	25	25	25	24	23	22	22	23	23	23	24	25	26	27	26	23	22	21	21	20	18	18	17	23
25	16	15	14	14	13	13	12	11	11	12	14	16	20	20	21	20	20	20	19	17	15	15	13	12	16
26	12	11	9	9	10	10	10	11	14	17	18	19	19	19	17	18	18	19	18	16	15	15	14	13	15
27	12	12	10	9	9	9	9	9	10	14	16	18	19	20	21	23	23	23	22	21	21	20	18	18	16
28	21	21	19	18	18	17	18	19	22	25	27	28	29	30	31	32	31	30	29	28	28	27	26	26	25
MEAN	27	26	25	25	24	24	23	23	24	27	30	32	33	35	35	36	35	34	32	31	30	29	28	28	

TOTAL NUMBER OF OBSERVATIONS = FOUR MEAN = 29.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF TEMPERATURE AT 200 FEET(DEG F)
TRAILER NO. = 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	27	29	29	29	30	29	29	28	28	26	27	26	24	24	26	27	27	24	23	23	23	22	22	21	26
2	22	21	20	20	19	17	16	16	16	16	16	18	20	23	25	26	27	27	26	24	22	20	18	17	20
3	17	17	16	16	16	14	14	15	14	17	22	25	28	30	32	31	31	31	29	29	27	26	24	24	23
4	22	22	20	21	20	18	17	17	17	19	22	25	28	29	31	32	31	30	29	28	27	25	25	25	24
5	23	24	24	24	25	26	25	25	26	27	30	32	32	33	34	35	34	33	30	29	29	27	26	25	28
6	24	23	22	21	19	18	18	17	18	20	23	23	27	29	31	32	32	32	31	29	28	24	23	23	24
7	24	23	22	19	19	20	20	18	19	23	27	31	33	33	34	35	36	35	33	33	30	21	27	27	27
8	26	25	27	27	27	26	25	25	25	28	33	36	38	40	41	41	40	39	35	33	33	31	29	29	32
9	29	29	28	29	29	27	25	23	21	26	29	31		37	38	38	38	36	34	31	30	29	27	26	30
10	25	24	23	22	22	21	22	22	21	23	28	31	34	35		37	38	37	35	32	31	30	28	28	28
11	28	27	26	23	25	23	22	22	25	26	29	32	33	31	28	30	28	29	28	27	25	24	24	23	27
12	23	22	20	22	22	21	21	21	22	26	29	33	36	37	38	37	39	35	33	31	30	30	31	32	29
13	32	31	32	31	32	29	27	28	29	32	32	34	37	39	39	40	40	40	37	35	34	32	31	30	33
14	29	27	25	22	22	22	22	22	22	24	26	28	29	30	31	31	29	28	27	26	25	23	22	22	26
15	22	22	22	22	23	24	25	25	25	28	32	35	38	40	42	43	43	41	39	38	38	36	35	36	32
16	33	33	32	32	33	32	31	32	33	36	37	40	42	44	47	46	44	41	39	38	38	36	37	36	37
17	38	37	36	34	36	34	33	33	35	38	42	44	44	45	45	45	44	43	42	41	38	36	37	37	39
18	36	35	35	35	34	33	32	33	35	36	39	41	43	43	44	43	43	43	40	37	37	35	33	32	37
19	33	33	31	30	29	27	29	29	31	34	37	39	40	42	44	44	43	43	42	40	39	37	37	36	36
20	35	35	34	34	33	34	32	32	34	38	43	46	46	48	49	49	49	46	43	42	40	39	39	38	40
21	38	38	36	37	36	37	38	37	39	42	45	46	46	46	46	47	45	43	42	43	43	43	43	43	42
22	42	34	28	27	26	24	23	22	21	18	18	19	18	20	22	24	22	20	20	19	19	19	18	18	23
23	17	16	15	15	15	14	15	15	16	18	21	23	24	25	26	27	26	26	24	23	22	21	22	23	20
24	22	22	23	23	22	20	19	20	21	22	21	22	24	25	26	25	21	20	19	19	18	17	15	14	21
25	14	13	12	12	11	11	10	9	10	11	12	15	18	19	19	19	19	19	18	17	15	13	12	11	14
26	10	9	10	9	9	9	9	10	12	15	16	17	18	17	15	16	17	18	17	15	13	13	12	12	13
27	10	10	8	7	7	7	7	8	8	12	14	16	18	19	20	22	22	21	21	20	20	19	17	18	15
28	20	19	18	17	17	17	17	19	20	23	25	26	27	28	29	31	31	30	29	28	27	26	25	24	24
MEAN	26	25	24	24	23	23	22	22	23	25	28	30	32	33	33	34	34	32	31	30	28	27	26	26	

TOTAL NUMBER OF OBSERVATIONS = F008 MEAN = 28.

: INDICATES CALIBRATION DURING THE HOUR

HOURLY TOTAL SOLAR RADIATION(LANGLEY)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL
1	0	0	0	0	0	0	0	1	4	13	11	7	9	44	35	16	10	0	0	0	0	0	0	0	150
2	0	0	0	0	0	0	0	0	5	13	13	24	35	48	19	16	6	0	0	0	0	0	0	0	179
3	0	0	0	0	0	0	0	3	20	37	45	48	49	46	39	21	10	1	0	0	0	0	0	0	319
4	0	0	0	0	0	0	0	2	14	19	34	35	49	47	41	24	11	1	0	0	0	0	0	0	277
5	0	0	0	0	0	0	0	1	6	20	31	33	36	34	33	21	9	1	0	0	0	0	0	0	227
6	0	0	0	0	0	0	0	2	14	30	42	43	50	46	40	26	15	1	0	0	0	0	0	0	309
7	0	0	0	0	0	0	0	2	16	29	41	48	51	48	41	28	13	1	0	0	0	0	0	0	318
8	0	0	0	0	0	0	0	2	15	30	41	49	51	48	41	27	11	1	0	0	0	0	0	0	316
9	0	0	0	0	0	0	0	2	16	31	42	50	4	33	42	30	13	1	0	0	0	0	0	0	264
10	0	0	0	0	0	0	0	2	15	30	42	50	52	49	3	30	14	2	0	0	0	0	0	0	289
11	0	0	0	0	0	0	0	2	16	27	36	50	39	15	13	15	12	2	0	0	0	0	0	0	227
12	0	0	0	0	0	0	0	7	27	28	29	35	51	34	25	29	14	2	0	0	0	0	0	0	281
13	0	0	0	0	0	0	0	1	8	10	20	25	47	48	39	27	12	3	0	0	0	0	0	0	240
14	0	0	0	0	0	0	0	2	19	14	25	28	36	38	28	27	7	1	0	0	0	0	0	0	225
15	0	0	0	0	0	0	0	2	11	19	39	49	51	45	41	30	12	2	0	0	0	0	0	0	301
16	0	0	0	0	0	0	0	4	18	23	38	43	52	52	43	31	14	2	0	0	0	0	0	0	320
17	0	0	0	0	0	0	0	2	14	27	41	46	47	43	41	20	10	2	0	0	0	0	0	0	293
18	0	0	0	0	0	0	0	4	15	33	44	48	43	32	40	22	19	4	0	0	0	0	0	0	304
19	0	0	0	0	0	0	0	4	18	34	45	53	55	52	40	33	17	3	0	0	0	0	0	0	356
20	0	0	0	0	0	0	0	5	20	35	47	54	57	55	46	34	18	3	0	0	0	0	0	0	372
21	0	0	0	0	0	0	0	3	19	34	40	52	53	31	26	16	8	2	0	0	0	0	0	0	284
22	0	0	0	0	0	0	0	2	5	6	11	7	8	15	15	13	7	1	0	0	0	0	0	0	92
23	0	0	0	0	0	0	0	9	26	40	50	53	51	50	33	26	20	3	0	0	0	0	0	0	361
24	0	0	0	0	0	0	0	3	11	30	28	54	54	54	37	27	13	3	0	0	0	0	0	0	314
25	0	0	0	0	0	0	0	3	9	17	30	35	24	36	25	27	17	2	0	0	0	0	0	0	225
26	0	0	0	0	0	0	0	6	31	24	32	51	23	11	6	11	10	2	0	0	0	0	0	0	207
27	0	0	0	0	0	0	0	4	26	50	55	63	55	50	37	44	21	2	0	0	0	0	0	0	409
28	0	0	0	0	0	0	0	8	22	39	51	59	60	56	46	32	12	2	0	0	0	0	0	0	387
TOTAL/10	0	0	0	0	0	0	0	8	44	74	100	119	119	115	91	70	35	5	0	0	0	0	0	0	0

TOTAL NUMBER OF OBSERVATIONS = 8011   TOTAL = 7050.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

TEMPERATURE CHANGE FROM 30' TO 100' (DEG F*10)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	10	17	17	13	15	15	21	9	7	0	-3	-3	-3	-4	-5	-6	-4	-2	0	0	0	0	0	0	3
2	-1	-2	-1	-1	-1	-2	0	0	-2	-4	-4	-4	-6	-7	-5	-6	-3	0	0	1	3	7	11	15	-1
3	10	10	19	13	12	26	15	27	12	-3	-5	-5	-6	-5	-8	-7	-3	0	17	27	14	15	16	17	8
4	13	4	12	14	11	13	14	4	0	-3	-6	-6	-8	-8	-8	-6	-3	0	4	12	15	4	12	13	4
5	15	16	25	16	15	18	13	8	18	5	-5	-7	-8	-7	-8	-6	-4	0	1	10	20	19	10	11	7
6	2	10	15	8	10	2	8	13	5	0	-7	-6	-8	-8	-8	-7	-4	0	8	8	12	13	6	18	3
7	19	18	18	16	23	15	25	4	12	0	-3	-6	-9	-6	-7	-7	-3	-2	5	12	25	17	20	15	8
8	16	18	22	28	16	21	30	30	14	-2	-4	-6	-8	-8	-9	-8	-6	0	12	15	27	23	38	39	12
9	30	21	13	25	22	40	41	17	5	-3	-7	-8		-9	-8	-7	-3	0	4	2	5	15	11	9	9
10	13	12	6	10	12	12	13	12	0	-7	-6	-7	-10	-8		-5	-5	0	6	4	3	6	14	18	3
11	19	25	16	8	14	15	22	15	11	-2	-2	-9	-7	-4	-3	-5	-3	0	0	7	2	3	6	16	5
12	17	17	6	16	33	18	15	14	13	3	-4	-7	-9	-9	-7	-7	-7	-1	3	10	14	10	17	24	7
13	12	18	25	20	22	17	17	21	17	24	1	-4	-7	-8	-7	-8	-4	0	1	2	3	5	5	2	7
14	9	2	7	2	3	1	0	2	-3	-5	-4	-6	-7	-7	-5	-6	-4	-1	3	6	1	13	6	17	0
15	14	27	23	5	8	20	25	22	15	-4	-6	-7	-7	-7	-9	-6	-4	-1	7	9	15	5	6	17	6
16	20	23	20	23	15	22	33	13	13	8	-4	-6	-7	-8	-11	-10	-6	-1	1	3	8	7	6	7	6
17	10	10	16	9	16	21	18	18	14	-1	-6	-9	-10	-10	-10	-8	-4	0	20	19	7	10	18	17	6
18	5	13	15	10	23	25	17	16	8	0	-6	-7	-7	-7	-9	-7	-7	-2	0	7	15	21	15	11	6
19	13	15	18	15	28	18	23	25	7	-4	-6	-7	-9	-8	-9	-9	-6	-1	4	19	32	7	8	12	7
20	19	20	21	18	18	20	15	14	11	-2	-5	-10	-10	-9	-11	-10	-6	0	8	17	15	16	15	22	7
21	19	21	10	9	13	13	9	17	6	-7	-9	-11	-11	-9	-7	-6	-6	-1	0	0	0	0	0	0	1
22	-1	-3	0	0	-1	0	0	0	0	-2	-2	-3	-4	-5	-4	-4	-1	0	0	0	0	0	0	0	-2
23	0	0	0	3	12	15	14	6	-4	-4	-9	-8	-9	-9	-8	-7	-6	-2	0	0	0	0	4	6	-0
24	0	0	0	0	0	0	0	0	-1	-4	-6	-9	-7	-8	-5	-6	-4	-1	0	1	3	2	2	0	-2
25	0	-1	-1	0	-1	-1	-1	-2	-3	-4	-7	-6	-5	-6	-5	-5	-4	0	3	2	6	6	14	14	-1
26	17	18	18	19	14	17	12	31	0	-5	-7	-7	-6	-4	-3	-3	-3	-1	0	0	0	0	0	3	4
27	1	5	9	5	2	0	0	0	-4	-4	-6	-7	-8	-8	-7	-8	-5	0	2	2	3	3	6	8	-0
28	5	6	18	14	13	16	20	16	0	-9	-11	-11	-11	-11	-10	-8	-4	0	0	3	5	1	6	1	1
MEAN	11	12	13	11	13	14	15	13	6	-2	-6	-8	-9	-8	-8	-6	-5	-1	3	7	9	8	10	12	

TOTAL NUMBER OF OBSERVATIONS = 7996 MEAN = 4.

: INDICATES CALIBRATION DURING THE HOUR

TEMPERATURE CHANGE FROM 30' TO 200' (DEG F*10)
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	8	11	6	4	9	13	11	-2	0	-6	-21	-14	-21	-25	-25	-24	-23	-21	-17	-18	-16	-13	-10	-12	-9
2	-19	-18	-17	-19	-20	-23	-22	-19	-22	-25	-25	-25	-26	-26	-25	-24	-21	-17	-12	-10	-7	0	0	1	-18
3	-1	-2	4	5	6	16	7	23	15	-22	-26	-25	-25	-25	-25	-25	-22	-15	6	28	27	17	11	9	-1
4	16	0	2	5	9	9	6	-2	-11	-22	-24	-25	-27	-27	-27	-24	-21	-13	-4	0	3	-2	8	10	-7
5	17	12	22	10	4	13	5	2	13	-5	-23	-25	-26	-25	-25	-23	-22	-9	-11	0	15	12	1	4	-3
6	-6	0	7	3	13	0	1	6	0	-12	-26	-23	-27	-26	-26	-25	-22	-16	-1	0	5	1	-5	12	-7
7	10	19	18	10	15	15	29	25	20	-3	-24	-25	-26	-25	-25	-25	-21	-18	-4	1	28	10	12	10	1
8	13	9	19	27	26	19	33	32	11	-16	-24	-24	-25	-24	-25	-24	-22	-9	5	10	23	17	52	55	4
9	29	21	16	21	34	37	46	52	1	-19	-22	-23		-29	-26	-25	-20	-12	-2	-4	-6	5	0	0	3
10	4	0	-2	2	3	4	5	6	-12	-26	-24	-25	-28	-26		-24	-22	-14	0	-5	-6	-2	6	8	-8
11	19	22	18	2	9	10	15	11	12	-11	-20	-28	-26	-22	-19	-25	-23	-17	-14	-1	-2	-4	-6	11	-4
12	6	14	-2	8	32	17	13	17	22	0	-23	-25	-26	-25	-24	-24	-23	-17	-5	0	5	0	14	24	-1
13	7	10	26	15	19	24	11	28	21	16	-11	-23	-26	-26	-26	-24	-21	-14	-9	-7	-5	-5	-5	-4	-1
14	0	-9	-3	-5	-6	-11	-15	-12	-20	-25	-23	-26	-27	-28	-25	-26	-25	-19	-10	-5	-6	1	0	10	-14
15	7	18	15	-1	0	14	27	24	10	-21	-25	-26	-26	-25	-27	-24	-20	-15	-1	4	10	0	-5	6	-3
16	16	19	19	21	13	14	30	19	20	9	-21	-24	-25	-24	-27	-24	-22	-15	-7	-4	1	2	4	1	-0
17	10	8	19	2	18	14	12	9	14	-16	-22	-26	-26	-26	-22	-22	-19	-12	21	28	-4	0	10	14	-0
18	-1	3	6	11	27	28	6	14	0	-12	-24	-25	-25	-24	-26	-23	-23	-17	-13	-3	5	14	6	1	-4
19	3	3	10	8	29	13	19	26	18	-19	-25	-26	-27	-20	-27	-25	-22	-14	-2	11	33	1	0	3	-1
20	12	14	12	15	21	36	18	15	14	-17	-23	-26	-26	-24	-27	-24	-23	-11	1	15	12	12	5	17	0
21	8	10	3	1	4	8	0	7	0	-24	-23	-22	-26	-24	-20	-25	-18	-15	-12	-14	-13	-15	-14	-13	-10
22	-15	-21	-15	-18	-18	-16	-16	-15	-14	-23	-22	-23	-22	-23	-20	-16	-15	-18	-18	-20	-17	-20	-19	-20	-20
23	-19	-16	-13	-8	0	5	-1	-7	-21	-21	-26	-26	-26	-28	-23	-21	-24	-20	-18	-13	-18	-16	-6	-6	-16
24	-14	-16	-16	-13	-18	-18	-19	-18	-20	-9	-24	-26	-22	-19	-15	-23	-24	-21	-17	-12	-10	-11	-12	-18	-18
25	-18	-22	-21	-20	-22	-24	-23	-24	-25	-27	-30	-29	-28	-29	-27	-26	-26	-19	-12	-9	-7	-5	2	2	-20
26	3	3	12	10	-1	5	0	22	-12	-20	-28	-29	-23	-24	-23	-23	-23	-20	-17	-21	-16	-15	-11	-8	-12
27	-12	-6	-2	-8	-10	-15	-15	-12	-22	-26	-27	-26	-28	-27	-26	-27	-23	-19	-13	-6	6	-4	0	0	-16
28	-6	-5	9	1	4	15	17	17	-15	-27	-27	-28	-26	-29	-28	-25	-22	-18	-11	-7	-4	-7	0	-10	-10
MEAN	2	2	5	3	7	7	7	8	-0	-16	-25	-26	-27	-26	-25	-25	-23	-17	-8	-2	0	-1	0	3	

TOTAL NUMBER OF OBSERVATIONS = 7999   MEAN = -7.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF BAROMETRIC PRESSURE
TRAILER NO. = 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	787	787	786	786	786	786	786	786	786	785	785	785	785	784	783	783	783	783	784	784	784	784	785	785	785
2	785	785	785	785	785	785	785	786	787	787	787	788	788	787	787	787	787	788	788	789	790	790	791	791	787
3	791	792	792	792	792	792	793	793	794	794	794	794	794	794	794	794	794	794	794	794	794	794	794	794	793
4	794	794	794	794	794	795	795	795	795	795	796	795	794	794	794	793	793	793	793	793	793	794	794	794	794
5	794	793	793	793	792	792	792	792	792	792	792	791	790	790	789	789	790	789	790	790	789	790	790	790	791
6	790	790	790	791	791	792	792	792	793	793	793	792	792	792	792	792	792	792	792	793	793	793	794	794	792
7	795	794	794	795	795	795	795	795	796	796	796	795	795	795	794	794	794	794	794	795	795	795	795	795	795
8	795	795	795	794	794	794	795	794	794	794	794	794	793	792	792	792	792	792	792	792	792	792	792	791	793
9	791	791	791	792	791	791	790	790	790	790	790	790		789	789	789	788	789	789	789	790	790	790	791	790
10	791	791	791	791	791	792	792	792	792	793	793	793	793	793		791	791	791	792	792	793	793	793	793	792
11	793	792	793	793	793	794	794	794	794	795	794	794	793	793	793	794	794	794	795	796	796	796	797	797	794
12	797	797	798	798	798	798	797	797	798	798	798	797	797	796	796	796	795	796	796	796	796	796	795	796	797
13	795	795	796	795	795	794	795	795	794	793	793	793	792	791	791	791	791	790	791	791	791	791	792	792	793
14	792	792	793	793	793	793	793	793	793	793	793	793	792	793	793	792	792	792	793	793	793	793	793	794	793
15	794	794	794	794	794	794	794	794	794	794	794	794	793	793	792	792	792	793	793	793	793	794	794	794	793
16	794	795	794	795	795	795	796	796	796	796	796	796	795	794	793	793	793	793	793	793	793	793	793	793	794
17	793	793	793	793	793	793	793	793	794	794	794	794	793	792	792	792	793	793	792	793	793	793	794	793	793
18	793	794	794	794	794	794	794	795	795	795	795	795	794	794	794	794	794	794	794	794	795	795	796	796	794
19	796	796	796	796	797	797	797	797	797	798	798	798	797	796	796	796	796	796	796	796	796	796	797	796	796
20	796	796	796	796	796	795	795	795	795	795	795	794	793	792	792	791	791	791	791	791	791	790	790	790	793
21	789	789	789	789	788	788	788	787	787	787	786	785	785	784	783	781	780	779	778	777	776	776	776	774	783
22	774	774	774	774	774	775	775	775	775	775	776	776	776	776	776	776	777	778	778	779	779	780	780	781	776
23	781	781	781	782	782	783	783	783	784	784	784	784	783	782	781	781	781	781	781	781	781	782	781	780	782
24	780	780	780	780	781	781	781	781	782	782	782	782	782	781	781	781	781	781	781	781	781	782	782	782	781
25	782	782	781	781	781	782	782	782	783	784	784	784	784	784	784	784	785	785	786	786	787	787	787	788	784
26	788	788	788	788	788	788	788	788	788	788	788	787	787	786	787	786	786	786	786	787	788	788	788	789	787
27	789	789	789	790	790	791	791	792	793	793	793	793	793	792	792	792	792	792	792	793	793	793	793	793	792
28	793	793	793	793	793	793	793	793	793	793	793	792	791	791	790	789	789	788	788	787	787	786	786	785	790
MEAN	790	790	790	790	790	790	791	791	791	791	791	791	790	790	789	789	789	789	789	790	790	790	790	790	

TOTAL NUMBER OF OBSERVATIONS = 6000 MEAN = 791.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 30 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	4	4	4	3	4	4	5	2	3	2	1	5	2	2	3	6	8	8	5	3	2	2	2	1	3
2	4	5	6	6	5	6	4	3	5	6	5	3	4	6	8	9	7	8	8	6	4	5	7	6	6
3	5	5	0	1	4	0	1	3	1	2	3	3	5	5	5	7	6	4	5	5	1	3	3	1	3
4	3	2	1	1	1	2	2	1	1	2	6	5	6	7	7	9	7	6	3	5	4	0	2	3	4
5	3	0	3	0	3	5	0	3	4	2	4	7	8	8	5	3	5	4	2	3	4	3	1	1	3
6	1	2	0	1	1	2	0	0	1	2	5	5	6	7	6	6	6	5	1	3	4	0	1	0	3
7	0	0	2	2	0	0	2	0	1	2	2	3	3	6	7	6	5	4	1	3	2	2	2	0	2
8	1	3	4	3	2	5	5	5	3	3	2	3	4	3	4	5	6	8	6	3	5	5	5	4	4
9	4	3	5	4	1	3	4	2	1	0	4	6		7	8	6	7	7	3	1	3	3	3	2	4
10	3	2	3	3	3	1	2	1	1	3	2	5	7	7		7	5	6	4	0	3	3	4	2	3
11	2	3	4	3	2	2	4	4	2	3	2	8	10	13	11	12	9	6	3	3	1	1	2	4	5
12	3	2	1	3	4	1	3	2	3	3	4	5	4	5	3	3	7	9	5	3	3	2	4	5	4
13	4	5	4	4	4	4	6	5	4	3	2	3	2	5	8	7	9	7	4	2	2	1	3	5	4
14	6	5	7	4	5	2	2	2	2	2	2	6	11	13	11	10	10	5	4	5	4	3	1	2	5
15	2	2	2	2	2	2	3	4	4	5	3	4	7	6	8	7	8	6	4	5	3	1	1	6	4
16	2	0	2	3	3	2	4	2	0	2	2	3	3	3	8	12	12	11	11	11	9	6	3	5	5
17	9	6	3	0	2	2	3	2	2	2	4	7	8	8	10	11	9	5	6	5	3	3	5	4	5
18	2	3	5	5	5	3	1	3	1	3	4	6	4	7	10	6	10	9	6	5	4	3	1	1	5
19	3	3	2	2	5	2	3	3	2	4	4	7	6	5	7	10	9	6	3	5	5	1	0	1	4
20	1	0	1	0	2	2	2	2	3	2	4	6	4	5	6	7	10	10	10	6	3	2	2	4	4
21	3	3	3	7	5	7	6	4	3	3	10	14	13	12	13	14	16	10	8	22	24	20	11	8	10
22	18	15	10	9	6	3	2	4	0	0	0	0	0	0	9	10	11	7	6	8	8	9	10	7	6
23	6	7	5	3	5	5	3	2	1	3	4	4	6	9	11	12	11	10	7	6	10	6	3	8	6
24	12	10	9	8	10	9	13	8	10	14	13	9	10	11	12	11	12	7	3	3	3	2	3	4	9
25	4	6	5	6	7	8	8	9	9	10	11	10	13	15	15	16	13	9	8	3	2	2	4	1	8
26	3	3	6	2	0	1	3	2	3	8	10	10	10	7	6	3	2	3	5	6	8	4	4	4	5
27	4	5	2	3	5	5	4	2	0	2	2	2	5	4	4	7	9	5	2	4	2	5	5	7	4
28	8	8	2	4	6	5	7	5	2	5	6	8	8	6	10	10	9	9	8	10	6	4	3	4	6
MEAN	4	4	4	3	4	3	4	3	3	4	4	6	6	7	8	8	8	7	5	5	5	4	3	4	

TOTAL NUMBER OF OBSERVATIONS = 8006 MEAN = 5.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 100 FEET
TRAILER NO. - 25 PERIOD(2/ 1/77 TO 2/28/77)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	4	5	4	6	5	5	2	4	3	2	5	2	3	4	6	8	9	7	4	1	2	1	0	4
2	4	6	6	7	5	6	5	3	5	7	5	4	4	6	8	9	7	8	11	7	4	4	6	6	6
3	3	3	0	0	2	0	0	1	0	2	2	4	6	6	6	5	6	5	5	8	3	2	3	0	3
4	1	1	3	0	0	2	3	0	0	1	4	5	6	8	8	9	7	7	4	4	3	0	0	1	3
5	1	0	2	0	2	5	1	2	4	2	4	8	9	8	6	4	6	6	1	2	3	2	1	0	3
6	0	0	0	0	0	1	1	0	0	1	5	5	6	7	6	7	6	5	4	1	3	0	0	0	2
7	0	0	0	2	0	0	1	1	1	2	2	3	4	6	8	7	5	4	2	0	2	2	0	0	2
8	1	3	6	5	2	7	7	6	4	2	2	2	3	3	4	5	7	11	8	3	4	6	6	5	5
9	7	5	7	2	1	2	4	2	0	0	4	5		8	8	9	7	9	5	0	1	3	2	2	4
10	1	1	1	3	3	2	3	1	0	4	3	5	6	8		7	5	7	6	0	0	1	3	1	3
11	1	0	4	2	1	2	2	3	3	3	1	10	13	16	14	14	11	7	4	4	1	0	1	2	5
12	0	1	0	4	2	1	4	1	1	4	4	5	5	6	4	3	7	10	7	3	4	3	4	6	4
13	5	5	4	2	4	5	6	6	6	3	2	4	3	7	10	9	11	9	5	2	4	2	5	6	5
14	10	7	8	6	7	3	0	2	2	2	3	8	14	16	13	12	13	6	6	8	5	3	0	2	6
15	2	0	1	0	1	3	5	7	7	5	3	4	7	6	8	6	9	7	6	7	4	1	1	3	4
16	1	1	1	3	3	0	1	1	0	1	2	3	2	3	10	13	13	14	15	14	12	8	6	7	6
17	14	10	8	3	6	2	1	1	2	1	4	7	9	9	11	12	11	6	8	7	2	3	6	7	6
18	0	4	6	7	4	3	1	2	2	3	4	6	4	8	10	9	11	12	7	6	6	0	2	0	5
19	3	2	1	0	4	2	2	1	1	4	5	8	8	6	7	11	9	8	4	5	7	1	1	0	4
20	1	0	1	6	1	1	1	1	3	2	4	6	5	5	6	8	13	14	15	10	5	5	3	4	5
21	3	5	4	9	6	10	8	3	2	2	10	15	15	15	17	16	19	13	11	28	30	24	14	10	12
22	23	20	13	11	8	3	5	6	7	6	4	6	7	6	12	13	14	9	8	10	11	11	11	9	10
23	9	9	6	5	5	5	3	1	1	3	5	5	7	11	14	15	13	13	10	8	12	9	6	13	8
24	16	13	12	12	13	12	15	11	11	15	13	11	12	13	14	13	13	8	3	2	3	2	3	4	10
25	5	7	6	7	9	10	9	9	11	11	13	12	15	18	18	16	16	11	11	5	0	1	3	1	9
26	3	1	3	2	0	2	4	4	4	10	13	12	12	9	6	4	2	3	6	8	11	5	5	6	6
27	5	7	4	5	6	6	5	3	0	3	3	3	6	4	4	8	10	5	2	6	5	8	9	11	5
28	11	10	5	6	10	11	12	8	2	6	6	9	9	7	10	11	10	10	10	13	8	6	6	4	8
MEAN	5	4	4	4	4	4	4	3	3	4	5	6	7	8	9	10	10	8	7	6	5	4	4	4	

TOTAL NUMBER OF OBSERVATIONS = 6006 MEAN = 6.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF BI-VANE WIND SPEED AT 200 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	5	4	3	4	8	2	3	2	4	3	1	4	3	3	4	6	9	10	8	4	1	1	1	1	4
2	5	7	7	7	5	6	5	3	5	7	5	3	3	6	8	9	8	10	13	9	5	3	6	6	6
3	3	2	1	1	1	1	1	1	1	1	1	3	5	4	5	6	6	4	3	7	3	2	2	1	3
4	1	3	2	1	1	2	2	1	1	2	4	5	7	8	9	10	8	9	5	3	2	1	1	1	4
5	1	1	2	1	1	4	2	1	1	1	5	8	9	9	6	4	5	8	1	1	2	1	1	2	3
6	1	1	1	1	1	2	2	1	1	1	5	6	7	8	7	7	7	6	4	2	2	2	1	1	3
7	0	0	0	0	0	0	1	2	2	1	2	3	4	7	8	7	6	4	2	1	1	3	1	1	2
8	1	2	4	3	2	3	6	3	3	2	3	3	4	3	4	6	7	12	10	1	1	4	5	3	4
9	3	2	4	1	1	2	1	1	1	1	2	5		8	9	10	8	10	8	2	1	3	1	1	4
10	1	1	1	2	2	2	4	3	1	4	2	6	8	8		7	5	8	9	2	1	1	2	1	3
11	1	1	3	1	1	1	1	2	4	1	1	9	12	18	16	14	11	7	4	4	2	1	1	2	5
12	1	2	1	4	1	1	4	1	2	3	3	6	5	6	4	3	8	12	11	3	4	2	3	4	4
13	4	4	3	1	4	4	5	6	6	5	2	3	2	7	10	9	12	9	5	3	5	5	7	8	5
14	13	9	9	7	7	4	1	2	2	1	2	8	14	16	12	11	12	7	7	9	6	4	1	2	7
15	2	1	1	1	1	4	7	11	10	6	2	5	7	6	9	9	10	7	6	9	6	2	1	1	5
16	1	2	2	1	2	1	1	2	4	3	2	3	2	2	10	14	15	19	21	21	19	11	13	14	8
17	19	15	13	8	12	6	3	2	4	1	4	8	10	10	12	13	12	9	11	11	1	5	5	9	9
18	6	3	4	6	4	4	3	2	4	2	4	8	4	8	12	10	13	12	8	7	6	1	1	1	5
19	4	2	2	1	3	1	1	2	2	5	5	8	7	6	9	12	10	8	6	5	11	4	2	1	5
20	3	1	3	2	1	1	1	0	1	0	2	7	5	6	7	9	12	16	21	15	10	9	4	3	6
21	3	7	8	14	8	16	11	2	1	2	12	18	16	16	18	20	21	15	15	35	35	20	16	12	15
22	26	22	16	13	10	4	6	9	8	7	4	6	8	6	12	14	15	10	10	12	12	12	12	10	11
23	10	11	6	6	6	5	3	2	2	2	5	4	7	11	15	15	14	14	11	10	14	10	8	15	9
24	17	13	12	12	16	13	17	13	13	18	12	11	13	14	15	13	12	8	3	1	3	2	4	5	11
25	4	7	6	8	10	10	9	10	11	11	12	12	16	18	18	20	15	11	10	5	1	2	3	2	10
26	2	1	2	1	1	1	2	4	5	9	12	11	10	8	5	4	2	3	6	8	11	6	6	6	5
27	5	7	5	6	5	7	5	4	1	2	3	3	6	4	4	8	10	5	2	6	6	10	13	13	6
28	10	8	6	6	10	13	17	13	4	7	7	9	8	7	10	11	10	10	12	14	9	6	6	3	9
MEAN	5	5	5	4	4	4	4	4	4	4	5	7	7	8	10	10	10	9	8	8	7	5	5	5	

TOTAL NUMBER OF OBSERVATIONS = 8009 MEAN = 7.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	117	134	149	167	149	117	144	240	274	106	47	316	145	72	42	312	305	284	285	306	59	97	89	163	118
2	276	299	294	293	290	285	292	275	290	328	283	271	258	278	344	350	356	6	357	355	280	252	249	244	296
3	255	238	112	215	238	149	188	263	121	111	36	1	354	358	306	355	347	315	225	198	135	272	168	17	257
4	247	300	313	148	41	303	159	40	309	327	299	309	303	314	306	301	309	313	271	217	199	40	238	250	293
5	203	202	243	72	160	187	358	147	152	116	201	208	199	204	205	214	204	204	232	209	239	215	125	301	196
6	268	236	24	348	79	7	171	54	118	42	314	304	300	294	302	303	300	299	272	241	232	351	257	115	306
7	67	59	246	237	94	50	265	71	71	78	41	340	298	339	340	325	350	336	166	212	95	115	231	175	28
8	46	95	139	150	149	151	120	129	110	51	21	35	266	205	221	230	218	199	191	103	107	135	122	130	141
9	136	144	138	186	122	202	237	360	359	332	299	289		316	320	314	336	307	326	223	220	242	208	202	262
10	177	268	265	257	240	250	230	157	11	278	298	307	303	317		351	334	307	315	272	216	232	227	161	269
11	55	186	336	258	305	197	248	208	62	275	16	326	343	344	351	353	26	31	69	303	206	175	229	220	313
12	241	254	108	201	347	19	168	258	177	90	61	188	231	243	201	328	274	190	179	74	85	109	116	121	172
13	109	146	113	199	163	55	144	90	148	96	68	335	342	317	345	289	312	322	265	231	338	10	324	52	22
14	4	336	300	277	254	261	161	162	217	276	310	324	339	353	10	23	38	53	100	116	84	168	350	199	332
15	96	293	191	239	185	199	142	190	147	128	18	327	338	333	311	305	300	280	215	203	203	194	191	241	228
16	164	34	124	118	215	147	251	193	307	66	106	357	44	158	217	209	203	207	200	193	195	185	192	142	175
17	195	192	213	255	242	56	71	90	74	55	317	290	299	290	283	291	290	258	217	206	119	195	221	208	239
18	302	266	167	167	243	233	209	205	147	58	40	34	12	2	323	330	308	306	45	149	168	241	240	156	238
19	177	191	194	167	254	168	232	214	89	68	10	350	312	322	321	316	327	305	276	214	213	33	151	300	259
20	186	75	232	229	202	320	253	215	122	32	351	217	251	248	283	221	213	210	201	190	145	213	99	102	210
21	104	123	134	185	150	187	162	191	92	241	228	212	202	207	213	210	190	166	161	189	192	194	218	233	181
22	219	230	262	286	286	346	326	297	6	33	360	349	273	285	297	220	291	282	269	272	267	261	255	263	288
23	268	276	295	267	234	210	203	170	171	345	280	297	272	214	215	221	215	216	218	229	230	223	190	219	233
24	215	225	231	241	266	251	255	263	272	270	295	292	270	275	271	300	354	356	302	232	315	326	267	284	274
25	268	303	298	302	309	323	322	319	319	325	327	343	351	345	348	355	360	354	344	66	186	226	223	202	318
26	246	188	258	102	237	143	175	172	168	200	208	203	228	222	283	239	251	104	279	267	290	292	280	286	227
27	283	294	337	263	243	280	273	244	252	6	344	326	319	289	297	321	295	297	233	192	191	194	185	195	274
29	179	177	129	128	169	176	203	201	33	198	215	214	218	208	195	195	191	170	178	181	155	127	97	85	174
MEAN	205	224	216	217	220	210	208	193	114	36	340	308	291	290	294	296	298	267	242	213	197	206	206	198	

TOTAL NUMBER OF OBSERVATIONS = 8007 MEAN = 248.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 100 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	109	126	133	162	162	109	124	225	271	43	11	285	177	45	55	340	298	283	281	296	357	76	60	94	72
2	282	302	298	296	293	290	300	286	293	314	309	297	279	294	322	325	340	4	350	347	320	286	277	276	304
3	250	231	111	79	196	240	67	193	168	98	16	308	87	1	318	323	339	324	252	206	173	208	102	233	246
4	258	332	286	144	5	296	215	331	280	276	305	311	310	317	312	310	313	316	306	247	238	68	14	211	298
5	199	102	174	52	89	148	209	125	121	104	199	212	266	209	210	219	206	211	178	168	177	226	48	328	175
6	275	191	331	310	33	341	202	110	79	312	316	306	304	303	308	310	309	316	331	303	263	258	40	110	313
7	142	6	308	241	87	34	268	358	27	86	47	341	313	345	344	333	356	344	111	180	10	153	285	127	4
8	228	36	122	133	139	147	125	133	123	72	13	355	264	235	227	230	222	206	199	109	151	139	126	132	153
9	139	131	127	195	46	165	263	359	360	13	309	303		321	323	321	336	319	342	45	253	269	244	242	313
10	197	283	262	250	243	241	230	214	311	273	290	315	315	323		352	341	324	331	360	252	254	251	220	278
11	85	45	298	224	2	195	290	171	158	220	327	332	345	346	350	353	24	34	26	322	316	141	201	214	329
12	142	253	167	168	147	321	122	251	2	102	60	194	219	207	211	313	270	191	189	126	126	129	128	137	173
13	108	135	85	203	169	96	135	118	159	193	86	331	339	329	345	303	319	325	296	277	343	3	335	13	1
14	3	343	313	303	274	285	148	144	210	267	300	332	345	358	14	27	42	55	97	106	82	127	352	195	357
15	186	251	122	169	127	171	166	177	159	141	116	322	340	335	318	312	305	286	225	212	225	171	177	229	204
16	175	175	179	43	154	231	260	104	163	75	61	321	325	164	213	209	203	206	200	192	194	191	194	179	185
17	192	190	193	191	192	229	117	133	162	72	299	289	299	290	286	298	294	266	231	223	222	224	244	223	230
18	267	275	123	129	182	192	156	197	176	65	53	33	61	1	328	332	319	318	41	141	156	225	247	151	151
19	122	123	360	11	228	137	181	135	72	78	6	343	308	321	321	312	325	309	296	224	203	227	158	30	324
20	163	17	192	128	190	95	271	171	91	23	340	209	250	241	279	220	211	209	202	197	188	187	171	131	193
21	158	178	201	194	181	196	175	128	114	242	230	215	206	211	218	213	194	172	169	190	193	195	216	230	193
22	222	252	265	288	286	349	331	307	7	36	2	354	261	294	303	292	299	289	280	281	277	270	264	271	295
23	270	281	294	282	267	237	240	212	195	326	285	301	277	221	222	228	223	223	226	237	238	228	210	225	246
24	220	227	237	207	271	256	260	267	275	274	299	293	274	280	276	306	352	355	317	266	338	345	299	303	283
25	278	310	310	311	315	331	330	326	326	331	333	349	360	353	357	2	9	3	356	54	101	262	254	247	331
26	246	121	266	136	76	84	161	179	178	199	209	209	233	226	282	252	224	123	264	278	306	304	295	264	224
27	288	293	325	310	267	289	288	288	289	10	338	337	325	301	289	317	300	304	265	200	203	206	202	204	286
28	190	190	187	177	182	184	198	198	163	205	221	220	222	215	202	201	199	178	188	192	174	129	113	102	186
MEAN	203	230	228	205	193	217	207	185	164	34	330	305	292	297	296	297	299	294	264	221	224	214	225	205	

TOTAL NUMBER OF OBSERVATIONS = 6009 MEAN = 257.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 200 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	153	170	156	174	185	145	139	252	282	42	355	292	205	60	45	311	301	289	291	301	309	75	25	259	266
2	296	316	312	311	307	306	313	306	307	317	311	296	284	293	328	341	331	8	4	360	354	318	296	291	316
3	262	242	208	126	181	275	82	123	125	113	28	29	350	353	311	325	340	323	277	203	168	214	87	167	226
4	203	337	267	95	91	288	243	264	246	242	296	301	308	318	312	304	313	325	329	272	260	156	103	157	281
5	165	129	201	182	114	154	217	148	121	118	216	213	209	210	212	207	207	217	170	161	147	248	202	336	183
6	301	242	332	254	236	250	232	197	175	256	317	308	301	297	309	311	306	314	340	340	316	274	211	197	278
7	199	283	342	246	204	139	310	334	344	78	31	338	306	341	341	330	355	342	79	137	158	200	244	156	319
8	272	18	142	141	120	159	142	156	144	101	23	13	246	217	218	227	211	200	198	51	164	151	158	159	160
9	150	132	127	168	98	126	273	351	302	308	288	304		326	328	328	344	326	346	337	286	290	204	253	306
10	234	270	267	262	260	253	240	236	249	258	264	309	308	317		353	336	320	336	333	53	240	279	227	280
11	196	142	330	207	39	177	262	153	116	189	318	332	344	347	354	356	24	38	9	303	286	229	244	224	300
12	158	243	218	182	175	268	88	205	224	120	82	200	231	247	214	310	279	187	190	189	159	159	162	140	193
13	209	134	322	205	176	164	134	164	160	188	145	21	328	329	349	297	320	328	305	288	329	6	352	10	300
14	12	358	330	326	290	298	94	124	172	243	283	329	347	359	15	27	40	51	89	95	76	84	65	174	24
15	182	280	212	202	148	163	170	176	165	149	155	321	339	338	314	309	306	289	237	224	240	219	178	221	222
16	218	198	191	38	145	274	315	148	139	123	93	327	282	176	219	215	210	213	209	202	203	206	214	204	200
17	206	204	205	208	209	208	261	200	207	194	299	289	300	290	284	290	291	267	245	241	242	243	256	230	240
18	269	275	141	132	148	200	196	226	206	150	65	34	65	3	322	329	312	308	37	123	132	59	225	124	138
19	100	76	4	345	223	192	193	130	136	104	17	345	323	323	323	309	328	306	309	244	219	197	167	95	304
20	187	162	165	166	214	239	276	21	109	68	330	223	239	234	282	227	217	215	212	207	205	205	201	190	211
21	203	198	210	200	197	204	192	182	179	228	228	216	206	212	218	213	196	178	183	198	199	199	219	230	203
22	231	238	270	293	290	330	324	308	3	34	360	354	283	295	308	297	300	289	285	284	282	274	268	275	297
23	277	283	289	280	285	265	258	245	218	312	289	295	280	226	228	231	229	228	231	244	242	233	227	232	254
24	228	235	244	253	275	261	264	272	279	276	301	299	278	281	277	306	360	2	333	307	353	5	319	322	292
25	301	323	316	320	326	335	331	328	327	331	334	349	360	354	357	2	0	3	357	30	44	310	263	287	337
26	255	205	262	203	107	93	141	188	189	205	214	215	242	237	292	255	227	147	266	276	301	305	295	279	232
27	286	294	332	335	290	299	301	323	5	8	347	340	322	295	302	321	303	307	283	211	222	211	212	212	298
28	198	197	200	198	192	193	205	208	204	204	219	215	219	217	204	205	196	178	189	194	163	145	130	114	193
MEAN	222	235	249	216	199	224	227	209	194	173	320	310	289	295	294	298	300	293	283	249	255	220	225	213	

TOTAL NUMBER OF OBSERVATIONS = 8009 MEAN = 256.

: INDICATES CALIBRATION DURING THE HOUR

CORPORATION

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 30 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	25	27	26	18	25	28	30	20	24	22	14	30	40	48	46	44	41	38	42	48	49	50	50	50	35
2	48	45	45	45	46	45	49	50	46	42	39	36	35	36	39	39	38	38	39	36	26	27	31	29	40
3	27	27	0	3	20	4	16	32	35	29	21	24	32	25	21	27	26	20	21	19	-4	0	4	-3	18
4	-1	-6	-9	-8	-13	-3	-6	-7	-15	-14	8	10	13	15	13	13	13	13	6	10	0	-23	-8	-1	-0
5	0	-17	-5	-18	0	4	-18	0	2	-4	1	7	8	8	5	1	7	5	-4	0	:	-2	-10	-11	-2
6	-13	-9	-21	-21	-18	-12	-30	-30	-31	-6	2	3	4	4	2	1	0	0	-12	-4	0	-29	-26	-32	-12
7	-40	-33	-19	-12	-26	-44	-19	-33	-24	-4	-6	-3	-2	3	5	5	3	2	-6	-1	-10	-9	-8	-24	-13
8	-16	-3	0	-1	-11	0	0	0	0	-1	-2	-3	-1	-2	0	0	2	4	0	0	:	3	3	1	-1
9	1	0	2	-2	-18	-4	0	-12	-18	-28	0	2		3	4	5	7	7	0	-11	0	0	-1	-8	-3
10	-2	-12	-6	-5	-6	-16	-10	-13	-22	-4	-8	1	2	4		5	1	1	-1	-26	0	-1	-1	-14	-6
11	-22	-11	-5	-8	-20	-16	-11	-9	-23	-14	-20	0	0	0	0	0	0	-4	-12	-18	-28	-24	-22	-13	-13
12	-11	-3	5	7	9	25	14	22	11	0	-8	-11	-12	-9	-13	-14	-4	-3	-9	-13	-13	-16	-11	-7	-3
13	-8	-9	-8	-14	-12	-7	-7	-8	-12	-12	-12	-12	-20	-7	-1	-1	0	0	-8	-15	-14	-31	-18	-7	-11
14	-3	-8	-6	-12	-9	-12	-12	-10	-10	-19	-18	-11	-4	-2	-2	-2	-3	-9	-12	-10	-11	-19	-17	-25	-11
15	-18	-1	-13	-27	-23	-17	-17	-15	-15	-11	-16	-8	-4	-5	-1	-1	0	-4	-8	-6	-17	-31	-29	-7	-13
16	-27	-39	-23	-21	-24	-27	-18	-24	-39	-20	-22	-16	-19	-17	-2	0	0	0	0	0	-1	-6	-17	-12	-16
17	-2	-7	-16	-38	-18	-14	-15	-15	-16	-18	-6	-3	0	0	0	0	0	-2	-2	-4	-13	-12	-6	-7	-10
18	-21	-13	-7	-8	-14	-17	-27	-17	-30	-11	-7	0	-5	0	0	0	0	0	0	-1	-5	-15	-22	-27	-11
19	-15	-15	-21	-20	-11	-18	-17	-18	-24	-8	-9	0	-3	-6	0	0	0	0	-5	-1	-6	-26	-37	-31	-13
20	-27	-34	-29	-37	-16	-27	-14	-10	-9	-3	0	1	0	0	1	3	5	6	5	0	-7	-9	-9	0	-9
21	-2	-2	-12	0	0	0	0	-3	-4	-10	1	3	4	5	6	6	6	4	1	6	6	5	2	1	0
22	3	1	0	0	0	2	1	0	-1	-2	11	7	3	4	0	-1	-3	-4	-6	-7	-9	-10	-12	-15	-2
23	-15	-16	-16	-17	-15	-14	-15	-16	-22	-14	-13	-14	-11	-10	-9	-8	-9	-8	-11	-14	-19	-14	-19	-10	-14
24	-8	-9	-9	-10	-8	-10	-8	-11	-10	-7	-7	-8	-7	-5	-4	-3	-1	-5	-21	-19	-20	-26	-20	-17	-11
25	-15	-10	-10	-9	-8	-8	-9	-9	-9	-8	-8	-7	-5	-5	-4	-3	-4	-6	-6	-20	-23	-21	-18	-17	-12
26	-26	-25	-16	-24	-25	-11	-21	-22	-13	-12	-10	-10	-10	-12	-9	6	10	2	2	-2	-3	0	0	0	-10
27	0	-2	1	0	-1	0	1	16	30	22	14	13	2	0	2	-3	-6	-6	-11	-12	-13	-16	-16	-11	-0
28	-10	-11	-22	-17	-13	-14	-13	-16	-23	-11	-9	-7	-7	-8	-4	-5	-4	-5	-6	-5	-7	-9	-10	-9	-11
MEAN	-8	-8	-8	-10	-8	-7	-7	-6	-9	-5	-3	0	0	1	3	3	4	2	-1	-3	-5	-10	-9	-9	

TOTAL NUMBER OF OBSERVATIONS = 7999 MEAN = -5.

: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 100 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	-20	-20	-18	-22	-19	-19	-20	-31	-22	-27	-33	-18	-31	-27	-21	-15	-10	-12	-14	-23	-59	-50	-39	-41	-25
2	-23	-13	-13	-14	-16	-16	-18	-28	-18	-14	-13	-20	-23	-17	-15	-13	-14	-14	-14	-14	-19	-20	-18	-17	-18
3	-21	-23	-42	-41	-29	-37	-41	-35	-42	-29	-26	-24	-19	-18	-19	-16	-18	-19	-23	-17	-50	-54	-28	-41	-29
4	-38	-38	-26	-44	-43	-32	-18	-44	-45	-38	-15	-16	-14	-13	-12	-11	-13	-13	-17	-17	-22	-40	-41	-34	-28
5	-36	-44	-30	-42	-29	-16	-31	-27	-18	-27	-20	-14	-12	-12	-17	-19	-16	-14	-33	-27	-24	-31	-38	-40	-27
6	-42	-40	-42	-43	-44	-40	-38	-44	-44	-39	-15	-14	-12	-12	-15	-15	-14	-15	-23	-33	-25	-59	-41	-44	-32
7	-44	-44	-40	-32	-44	-44	-33	-34	-38	-26	-25	-24	-20	-17	-16	-15	-20	-19	-26	-37	-52	-53	-59	-42	-32
8	-33	-27	-16	-18	-30	-15	-16	-15	-19	-22	-20	-19	-23	-27	-19	-17	-18	-16	-17	-27	-22	-22	-22	-22	-22
9	-22	-23	-22	-33	-37	-28	-20	-29	-40	-43	-22	-20		-14	-17	-16	-19	-21	-22	-36	-29	-21	-27	-28	-27
10	-31	-35	-32	-26	-27	-28	-27	-36	-41	-24	-29	-21	-18	-18		-21	-21	-21	-19	-40	-40	-55	-25	-51	-29
11	-33	-39	-24	-32	-37	-33	-35	-24	-29	-29	-32	-15	-13	-14	-13	-16	-18	-20	-22	-20	-54	-40	-59	-29	-28
12	-40	-36	-44	-25	-36	-39	-25	-36	-34	-17	-15	-16	-19	-18	-26	-27	-21	-21	-23	-28	-24	-29	-24	-19	-28
13	-23	-21	-28	-28	-24	-24	-18	-24	-19	-28	-29	-28	-23	-22	-20	-19	-21	-19	-23	-27	-19	-50	-21	-20	-24
14	-18	-19	-17	-23	-19	-26	-43	-32	-33	-28	-27	-17	-14	-15	-16	-16	-15	-17	-16	-16	-16	-26	-59	-50	-23
15	-30	-37	-33	-42	-33	-14	-11	-11	-13	-18	-24	-22	-18	-20	-18	-19	-19	-20	-20	-20	-25	-54	-54	-25	-24
16	-35	-36	-35	-28	-26	-40	-38	-35	-39	-38	-28	-27	-24	-29	-17	-14	-15	-15	-14	-14	-15	-18	-18	-21	-27
17	-17	-17	-18	-26	-23	-32	-37	-35	-30	-34	-23	-15	-17	-17	-17	-17	-17	-19	-18	-21	-29	-26	-18	-19	-24
18	-21	-23	-16	-18	-27	-24	-31	-26	-27	-24	-23	-18	-22	-20	-17	-18	-18	-18	-17	-15	-14	-36	-25	-41	-23
19	-21	-27	-34	-42	-17	-27	-29	-36	-34	-11	-18	-16	-18	-21	-17	-17	-18	-19	-18	-18	-23	-34	-34	-59	-25
20	-36	-40	-35	-42	-33	-35	-31	-34	-26	-31	-21	-18	-22	-23	-16	-22	-20	-21	-21	-20	-24	-23	-25	-24	-28
21	-25	-18	-21	- 9	-10	- 7	-11	-22	-26	-24	-14	-17	-16	-16	-16	-16	-19	-21	-20	-17	- 7	- 9	-11	-17	-17
22	-12	-10	-13	-16	-14	-25	-23	-21	-16	-15	-25	-23	-21	-21	-16	-16	-15	-16	-16	-16	-15	-15	-14	-15	-18
23	-16	-15	-18	-19	-18	-18	-27	-34	-33	-26	-19	-22	-19	-18	-15	-14	-14	-15	-15	-17	-15	-14	-20	-15	-20
24	-14	-14	-12	-12	-12	- 9	-10	-10	- 9	- 9	-10	-11	-12	-12	-13	-12	-11	-12	-19	-25	-21	-20	-18	-16	-15
25	-16	-12	-13	-16	-16	-15	-15	-16	-15	-15	-14	-14	- 9	- 9	-10	- 9	- 9	-10	-10	-15	-40	-31	-19	-29	-17
26	-22	-34	-22	-28	-42	-26	-14	-17	-14	-12	-10	-10	-11	-10	-14	-24	-31	-23	-16	-13	-11	-14	-14	-17	-20
27	-14	-13	-16	-14	-15	-14	-15	-27	-42	-27	-24	-25	-20	-20	-24	-15	-14	-17	-28	-17	-18	-20	-13	-13	-20
28	-13	-12	-20	-21	-18	-16	-15	-17	-30	-17	-16	-14	-15	-16	-18	-13	-15	-15	-14	- 8	-11	-11	-15	-18	-17
MEAN	-27	-27	-26	-28	-27	-26	-26	-29	-29	-26	-22	-20	-19	-19	-18	-18	-18	-18	-20	-22	-24	-27	-27	-28	

TOTAL NUMBER OF OBSERVATIONS = 6009 MEAN = -24.

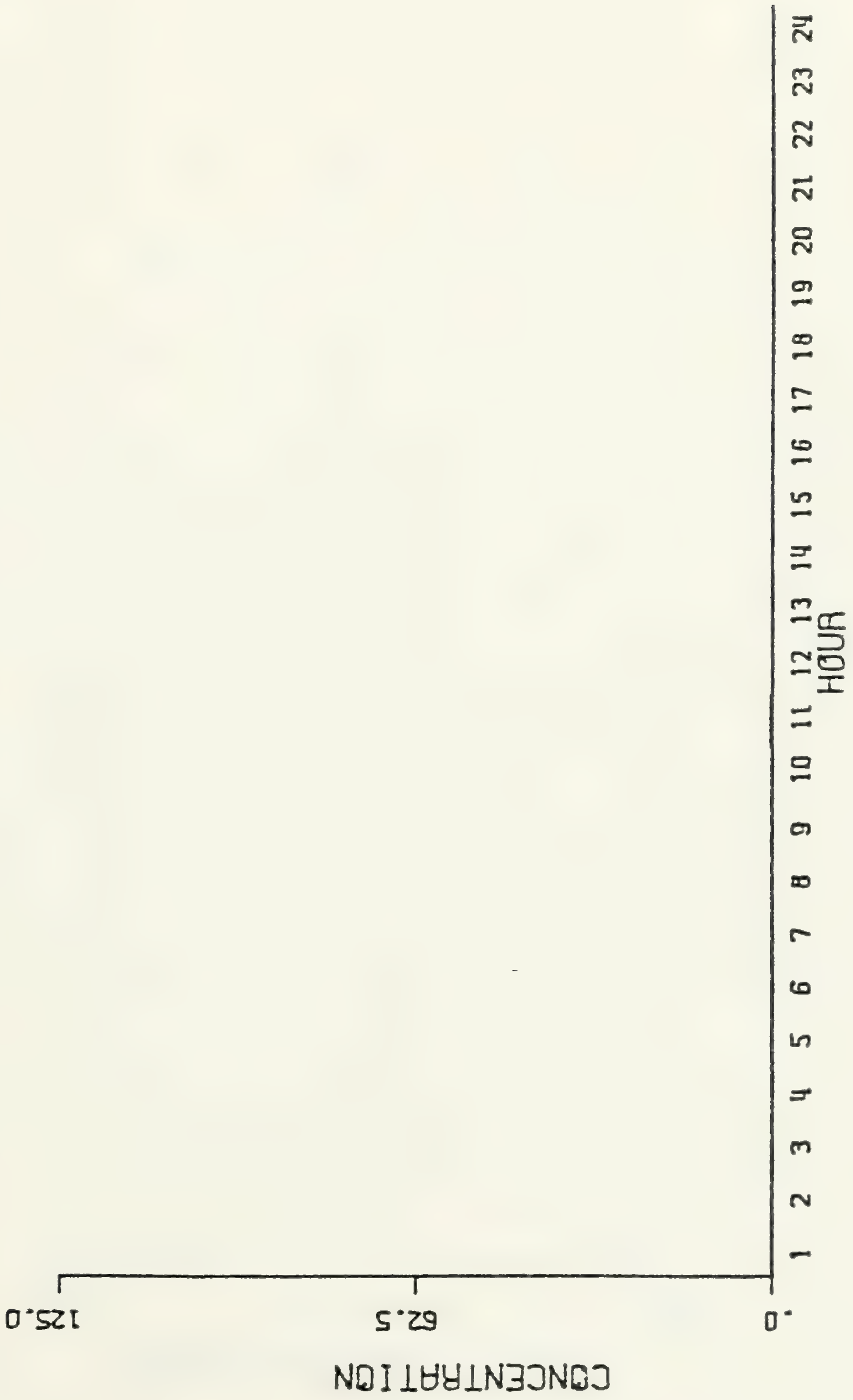
: INDICATES CALIBRATION DURING THE HOUR

DIURNAL VARIATION OF VERTICAL BI-VANE WIND DIRECTION AT 200 FEET
TRAILER NO. - 23 PERIOD(2/ 1/77 TO 2/28/77)

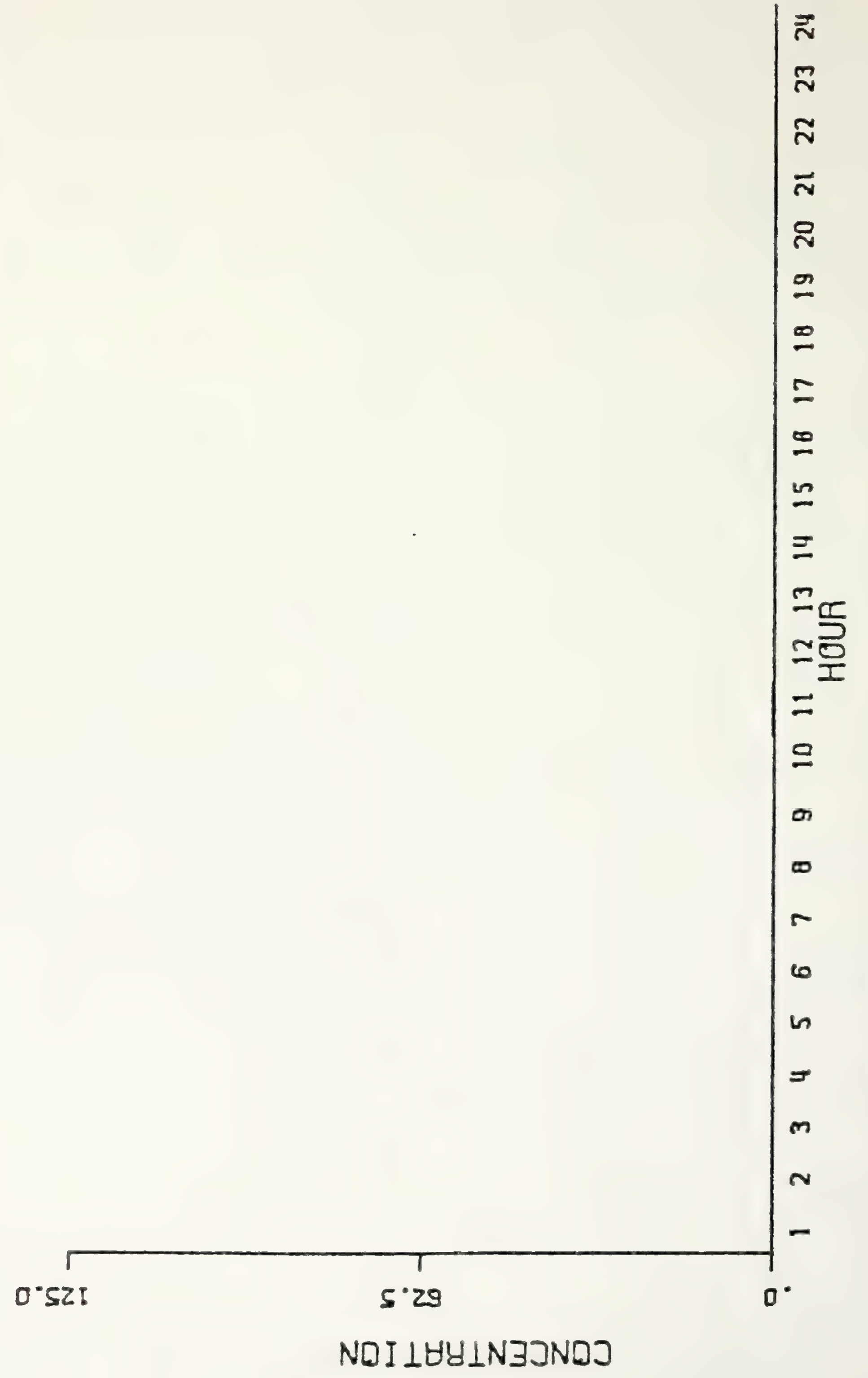
	HOUR																								
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN
1	-4	-6	-7	-4	-7	-5	-6	-3	-6	-3	0	-5	8	0	-12	-9	-5	-7	-9	-14	-16	-28	-22	-7	-8
2	-10	-12	-13	-13	-14	-13	-16	-19	-15	-11	-7	-7	-5	-2	-5	-4	-3	-4	-4	-4	-2	-2	-7	-7	-10
3	-4	-3	0	-2	-7	-14	-22	-29	-29	-12	0	-2	-5	-2	-3	-5	-6	-3	-3	-8	-4	-1	0	5	-8
4	7	0	0	6	0	-1	-3	0	0	3	-5	-5	-6	-7	-5	-5	-9	-9	-5	-10	-6	0	0	0	-3
5	-1	0	-3	7	0	-9	-5	-2	-5	-3	-2	-9	-8	-10	-11	-3	-11	-12	-1	-7	-3	-1	5	0	-5
6	2	3	4	2	0	0	-1	0	-1	0	-5	-9	-8	-8	-6	-9	-7	-10	-3	0	0	-2	0	0	-3
7	0	8	0	-1	4	2	2	-1	0	0	-5	-5	-6	-8	-10	-6	-11	-8	-2	8	9	0	4	5	-1
8	8	-1	-5	-5	-1	-5	-15	-10	-11	-8	-1	0	-4	0	-2	-1	-5	-1	10	1	2	-4	-6	-3	-3
9	0	0	15	15	10	2	7	6	6	9	0	-1		8	4	5	-2	-4	-2	1	2	0	5	4	3
10	2	5	17	10	0	0	0	1	8	3	0	-2	-1	-1		-3	0	-4	-2	4	21	4	0	1	2
11	6	4	0	5	6	8	8	0	0	2	3	0	-3	0	-4	-5	-5	-3	-1	-2	-1	-4	-11	-15	-0
12	-37	-21	-18	-19	-29	-23	-20	-23	-12	-8	-1	-5	-2	-1	-6	3	-3	-7	-5	-1	-2	-1	-2	-5	-11
13	-1	-3	1	2	-3	-3	-6	-3	-7	-3	1	-2	7	-3	-2	-4	-6	-5	-7	-7	-3	0	0	-3	-3
14	-4	-3	-5	-4	-6	-11	-33	-22	-12	-4	-4	0	-3	-4	-4	-5	-5	-4	-6	-7	-3	-4	0	-3	-8
15	-2	1	3	3	-1	-7	-8	-7	-8	-10	0	0	-6	-6	-8	-10	-11	-13	-15	-15	-12	-7	-6	0	-7
16	-2	-6	-3	-2	-4	2	1	-5	-14	-12	-1	-6	5	-3	-6	-7	-9	-8	-6	0	0	0	-2	-4	-5
17	-7	-6	-4	0	2	4	0	-1	-4	4	-2	0	-4	-4	-4	-3	-1	0	0	7	0	-3	-3	-6	-2
18	-3	-3	-3	0	5	3	2	4	2	8	-3	-3	0	-1	1	20	27	31	47	19	0	11	5	6	7
19	-2	0	0	1	0	0	0	0	0	-2	-2	-4	-2	-2	-2	-5	-5	2	0	-6	-5	-1	0	8	-1
20	-3	3	-1	0	3	2	2	3	-1	-4	4	-5	-4	-4	0	-4	-3	-5	3	-4	-4	-3	-2	-1	-2
21	0	-3	-2	-5	-5	-6	-5	0	0	0	-3	-5	-3	-3	-4	-4	-5	-3	-3	-4	-5	-4	-3	-1	-4
22	-2	-2	1	-7	-7	-16	-12	-8	-7	-6	-17	-11	-8	-9	-5	-4	-5	-4	-4	-4	-5	-4	-5	-4	-7
23	-4	-3	-4	-4	-4	-5	-3	-2	-3	0	-2	-4	-1	-6	-5	-5	-5	-5	-5	-5	-5	-5	-3	-6	-5
24	-6	-6	-6	-5	-4	-4	-5	-3	-3	-5	-5	-4	-5	-3	-4	-4	-4	-4	-1	0	-2	0	-3	-3	-5
25	-5	-5	-7	-6	-7	-5	-5	-6	-4	-4	-4	-4	-4	-4	-5	-4	-5	-4	-5	-2	0	0	-1	0	-5
26	-2	0	-2	0	0	-5	-8	-7	-6	-6	-7	-6	-7	-3	-6	-14	-3	-5	0	-5	-5	-4	-5	-4	-6
27	-5	-5	-3	-4	-5	-6	-7	-10	-25	-6	-5	-2	-3	0	-2	-1	-3	-5	-2	-7	-8	-6	-6	-7	-6
28	-8	-7	-6	-5	-7	-6	-7	-6	0	-6	-4	-4	-5	-5	-6	-3	-8	-7	-7	-7	-7	-9	-6	-6	-7
MEAN	-4	-3	-2	-2	-3	-5	-6	-6	-6	-3	-3	-5	-4	-4	-5	-4	-5	-5	-2	-3	-3	-4	-3	-2	

TOTAL NUMBER OF OBSERVATIONS = 1978 MEAN = -4.

: INDICATES CALIBRATION DURING THE HOUR

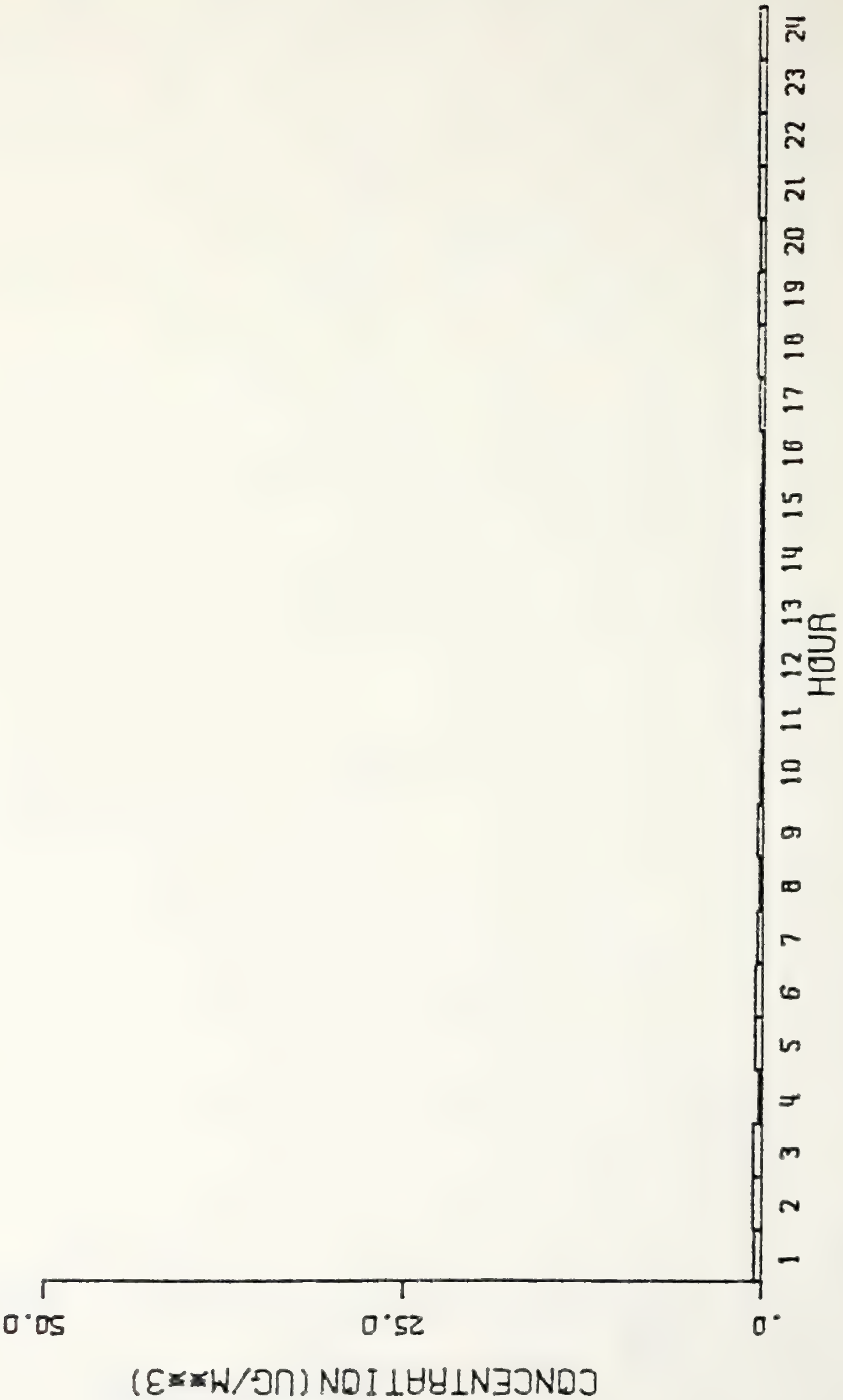


DIURNAL VARIATION OF NITROGEN OXIDES(UG/M**3)
SITE - 23

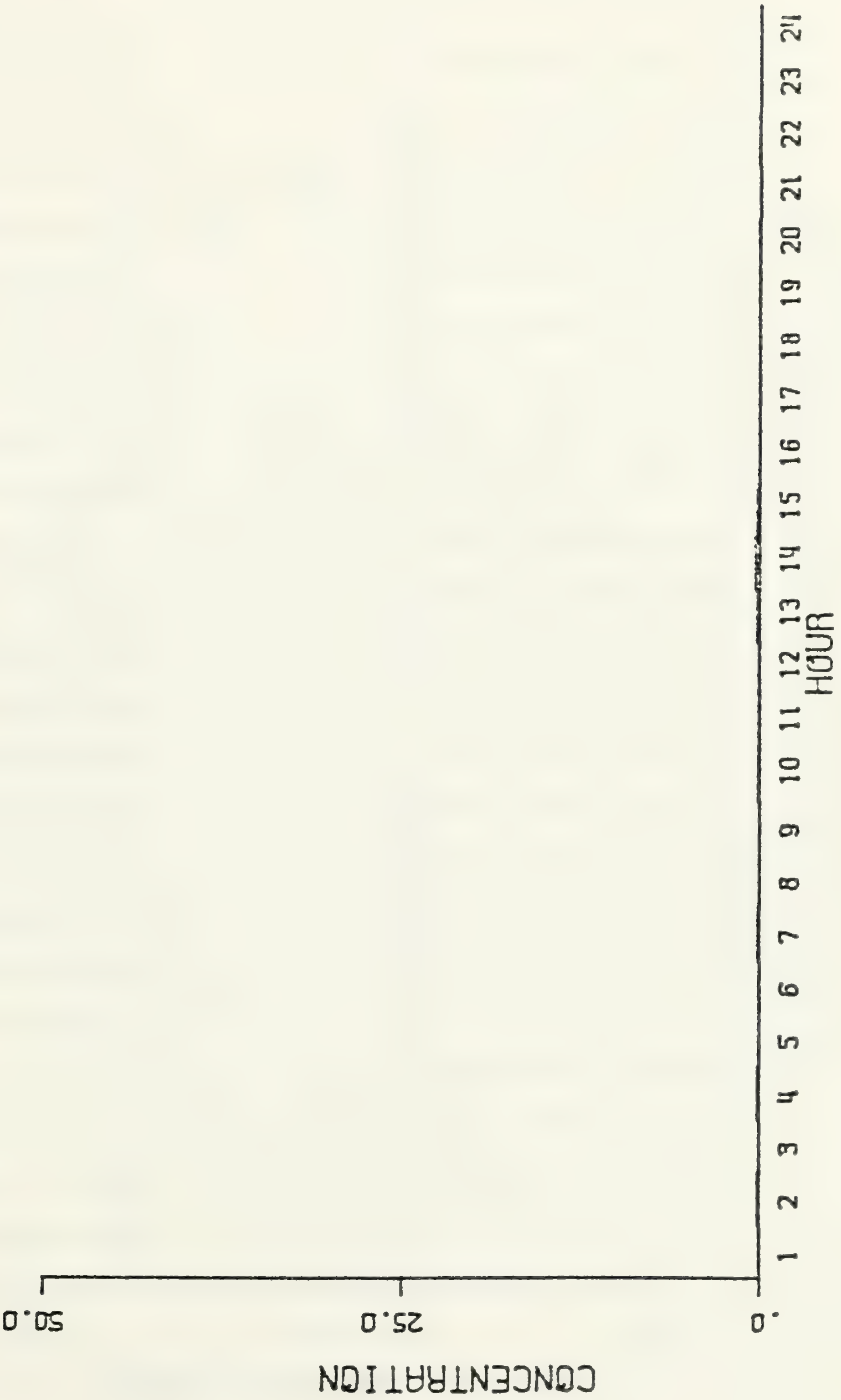


DIURNAL VARIATION OF NITRIC OXIDE(UG/M**3)
SITE - 23

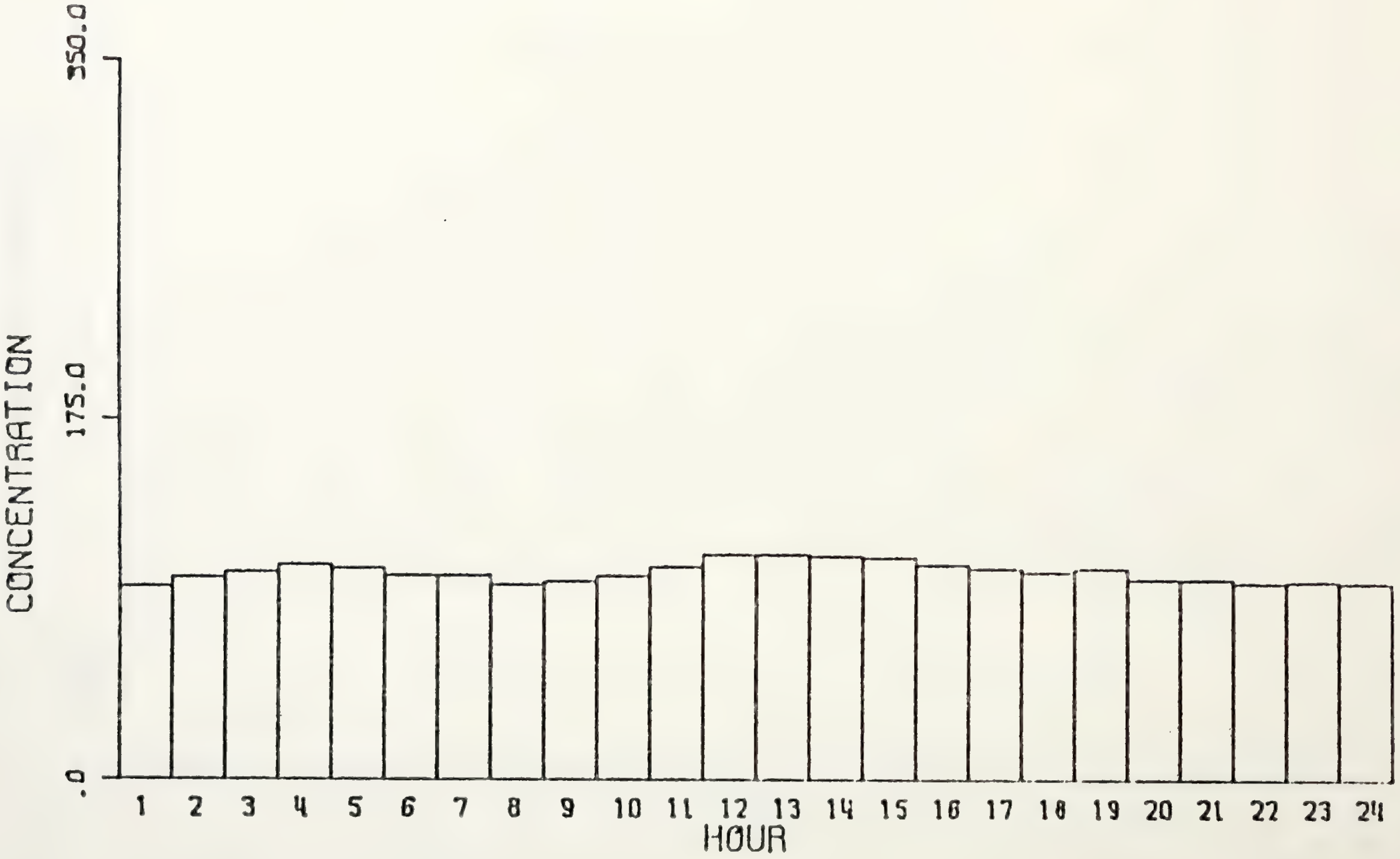
DIURNAL VARIATION OF NITROGEN DIOXIDE (UG/M**3)
SITE - 23



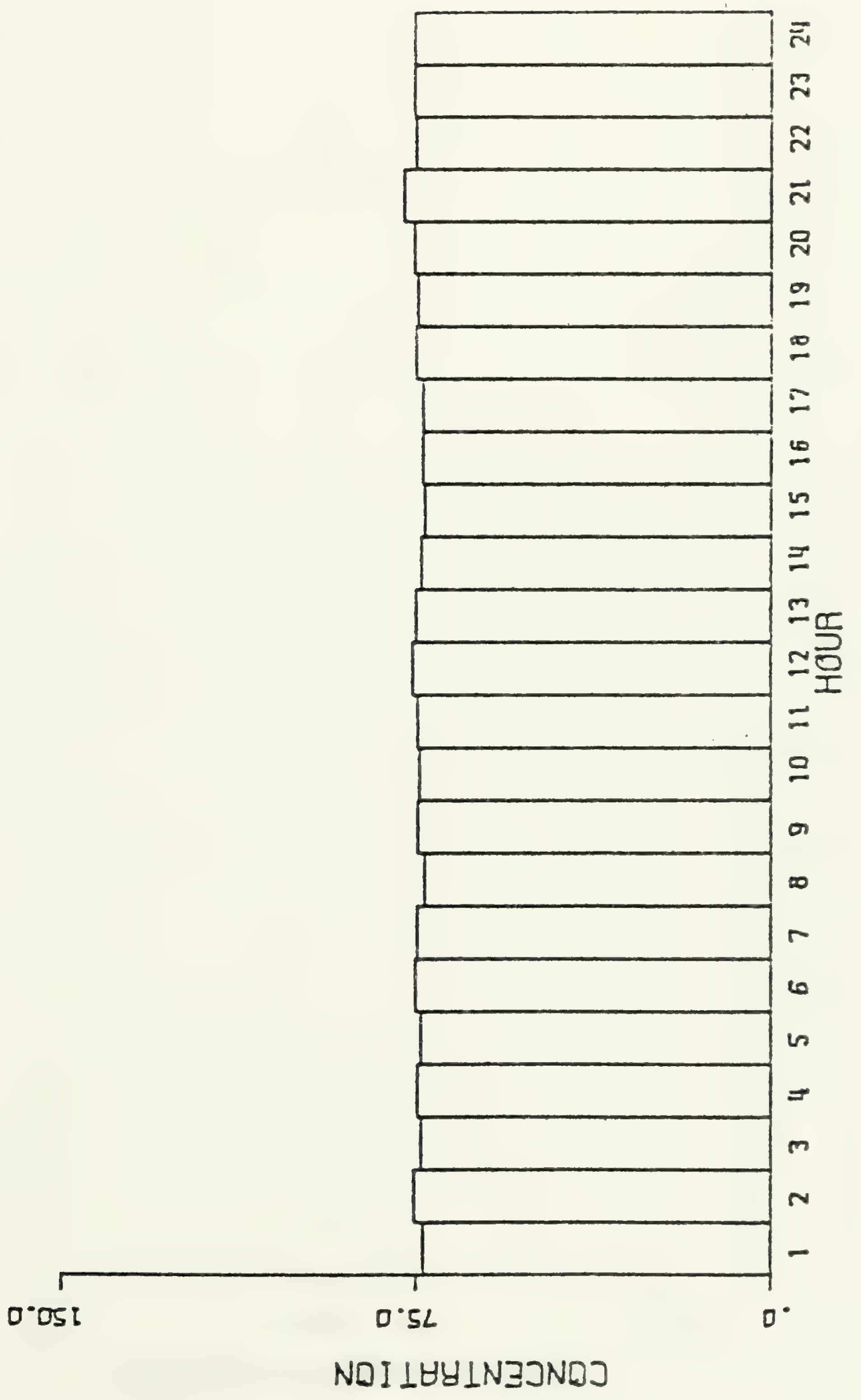
DIURNAL VARIATION OF SULFUR DIOXIDE (UG/M**3)
SITE - 23



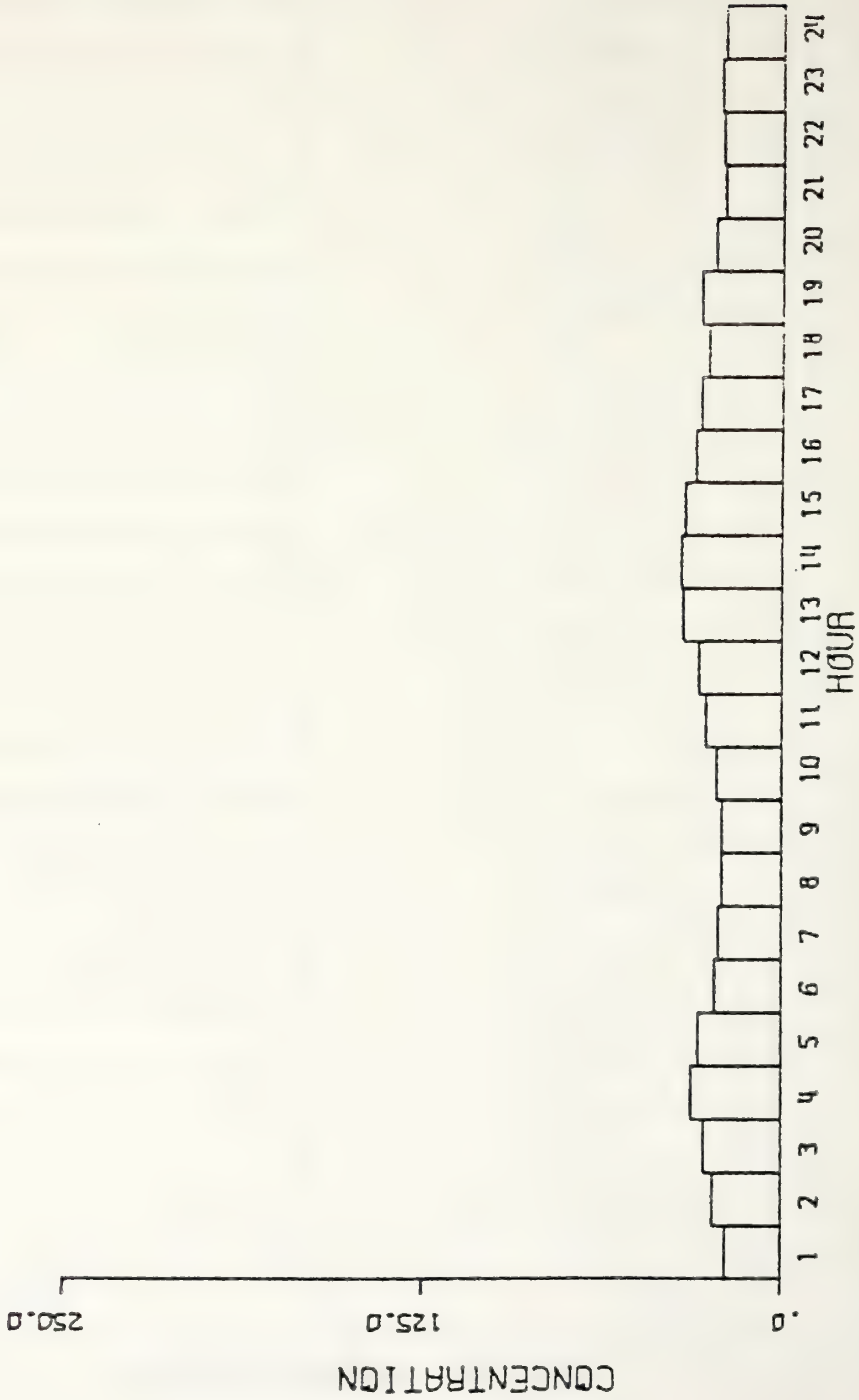
DIURNAL VARIATION OF HYDROGEN SULFIDE (UG/M**3)
SITE - 23



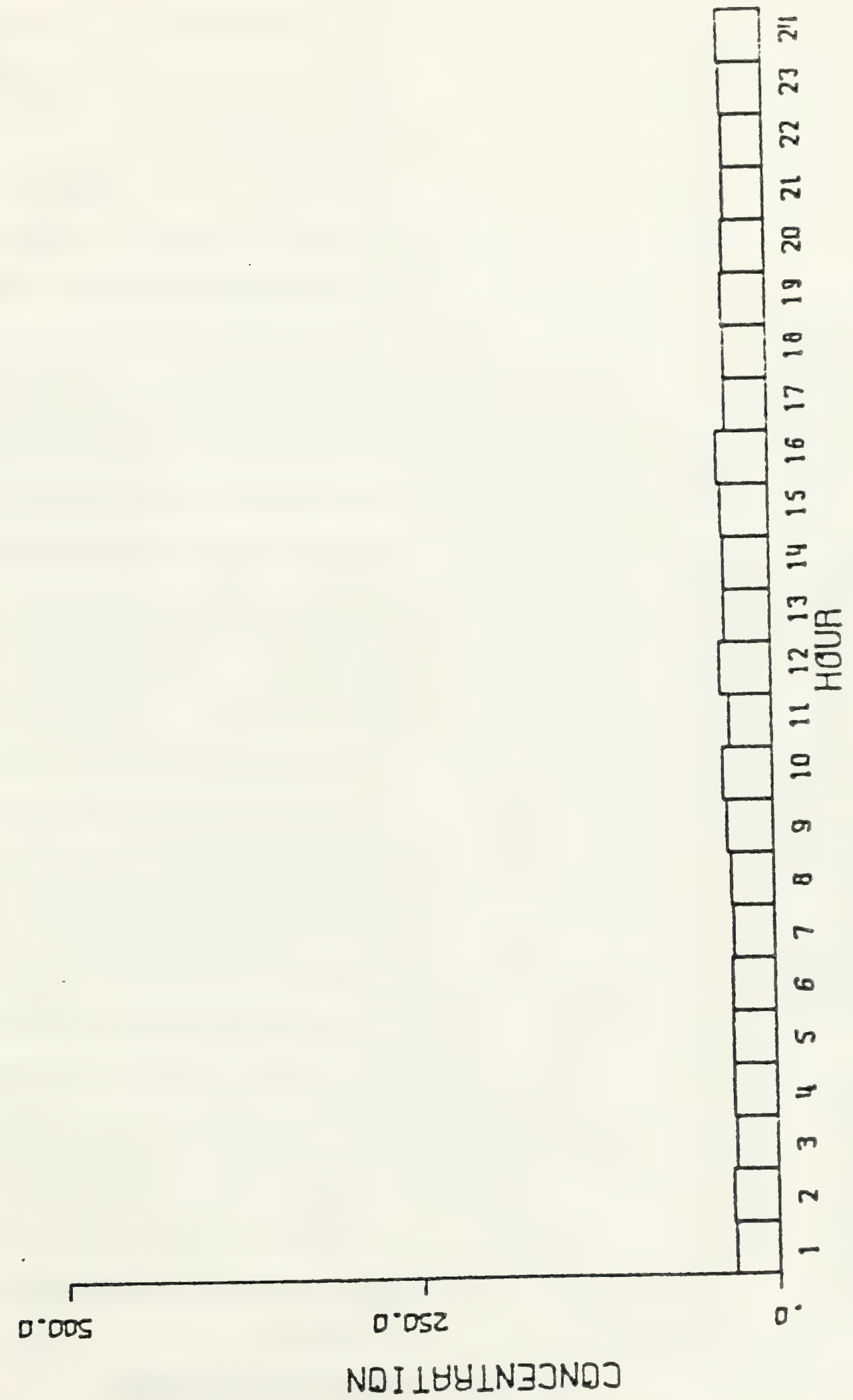
DIURNAL VARIATION OF TOTAL HYDROCARBONS(UG/M**3 X 10**-1)
SITE - 23



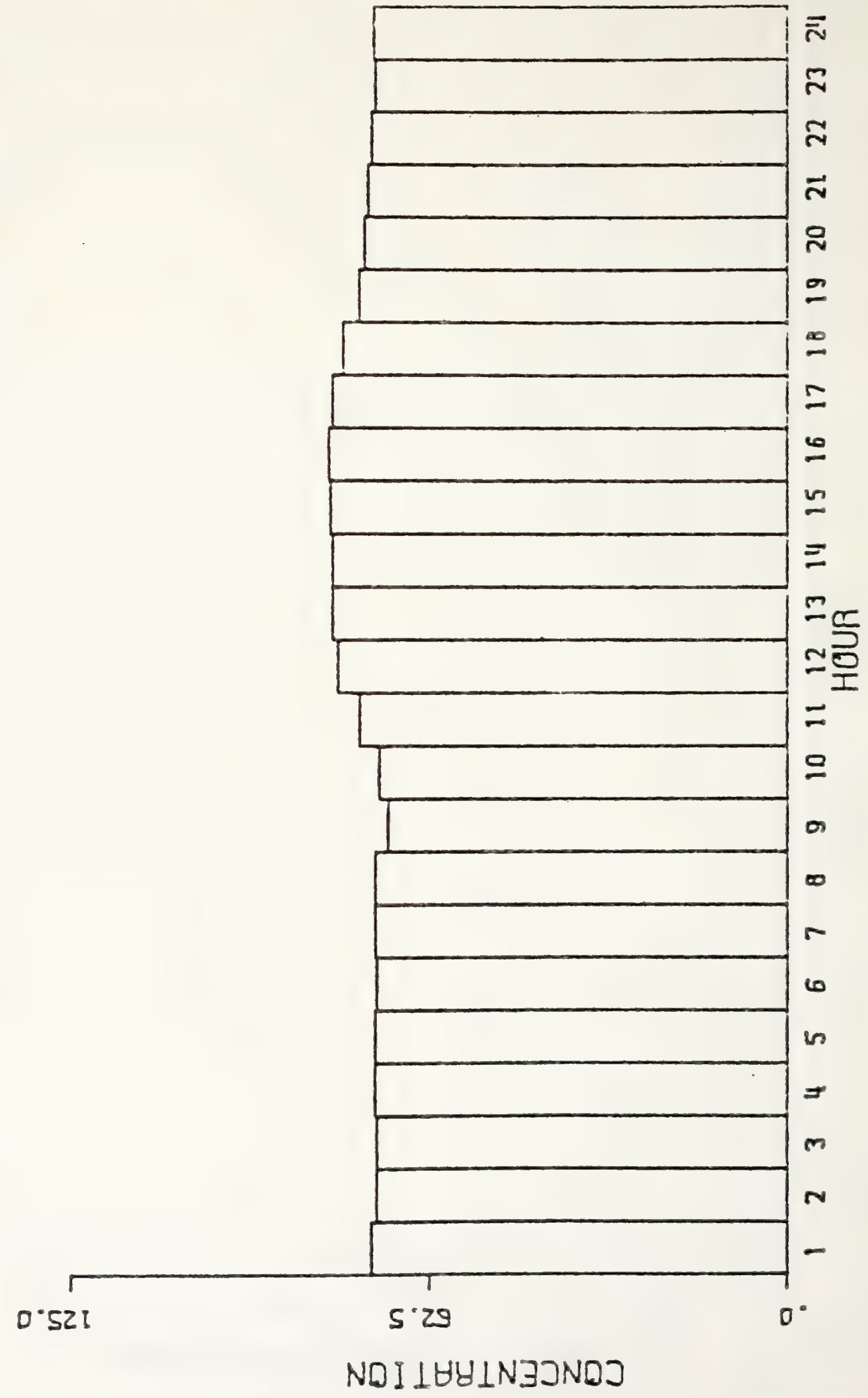
DIURNAL VARIATION OF METHANE(UG/M**3 X 10**-1)
SITE - 23



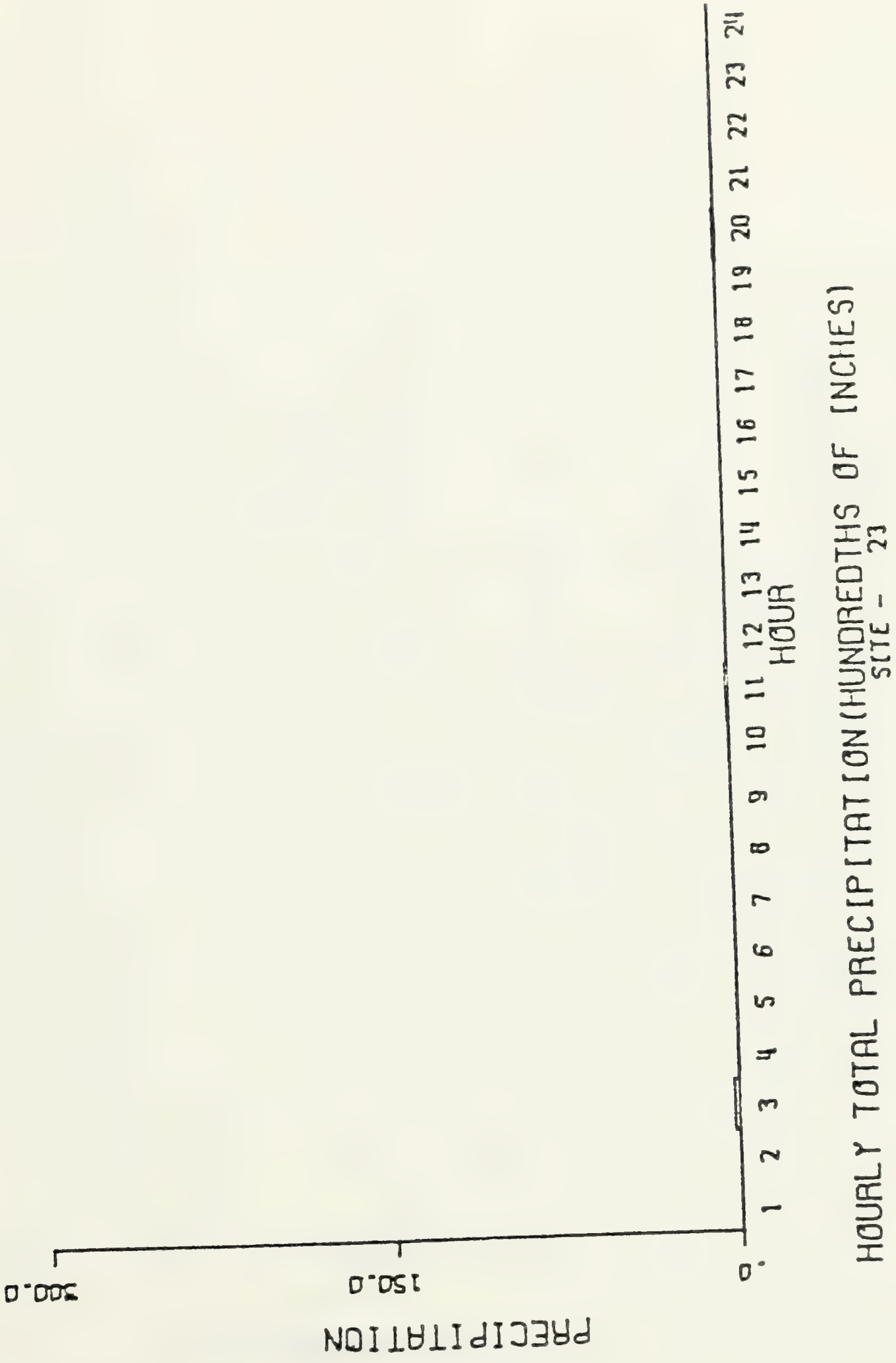
DIURNAL VARIATION OF NON-METHANE HYDROCARBONS (UG/M**3 X 10**-1)
SITE - 23

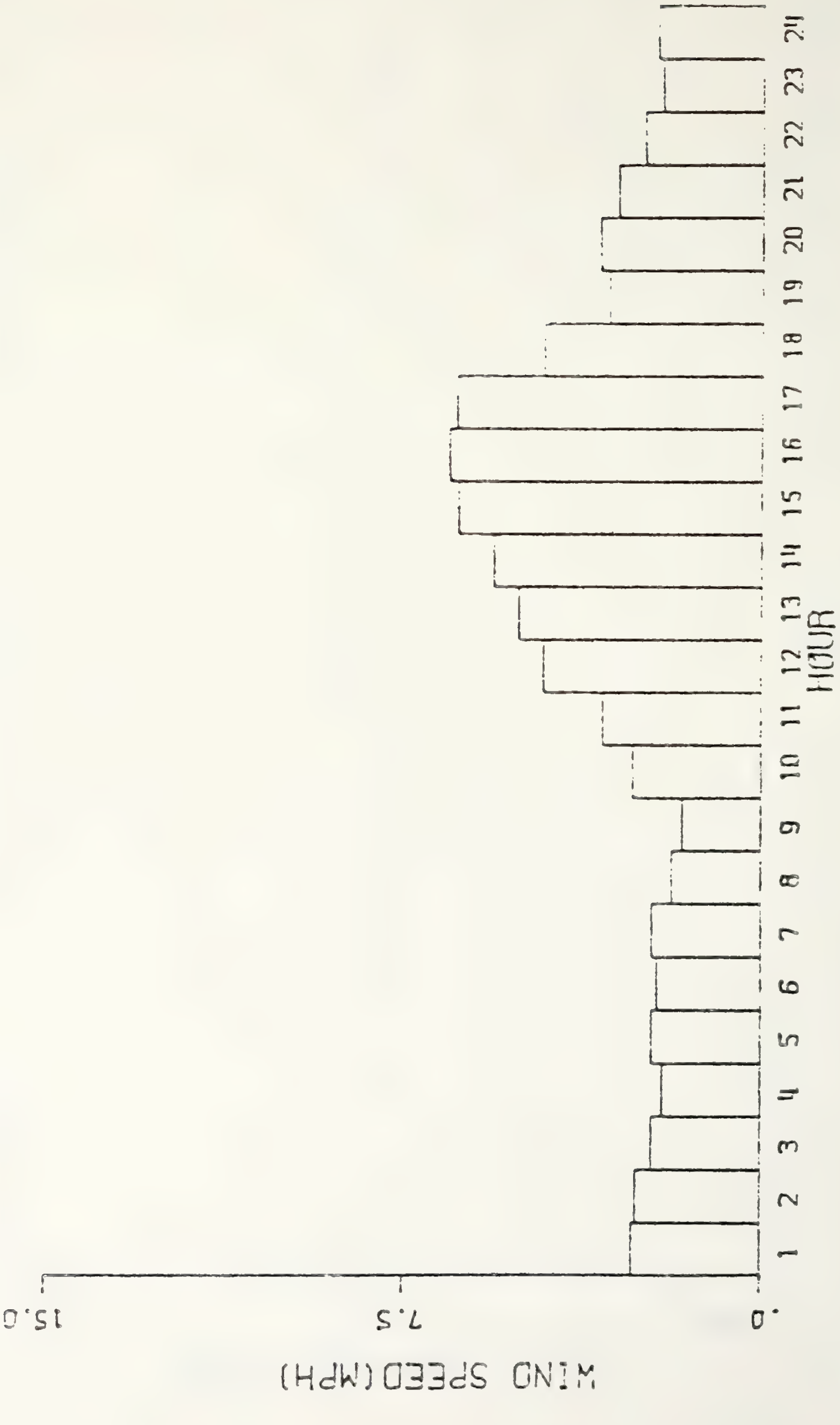


DIURNAL VARIATION OF CARBON MONOXIDE (UG/M**3 X 10**-1)
SITE - 23

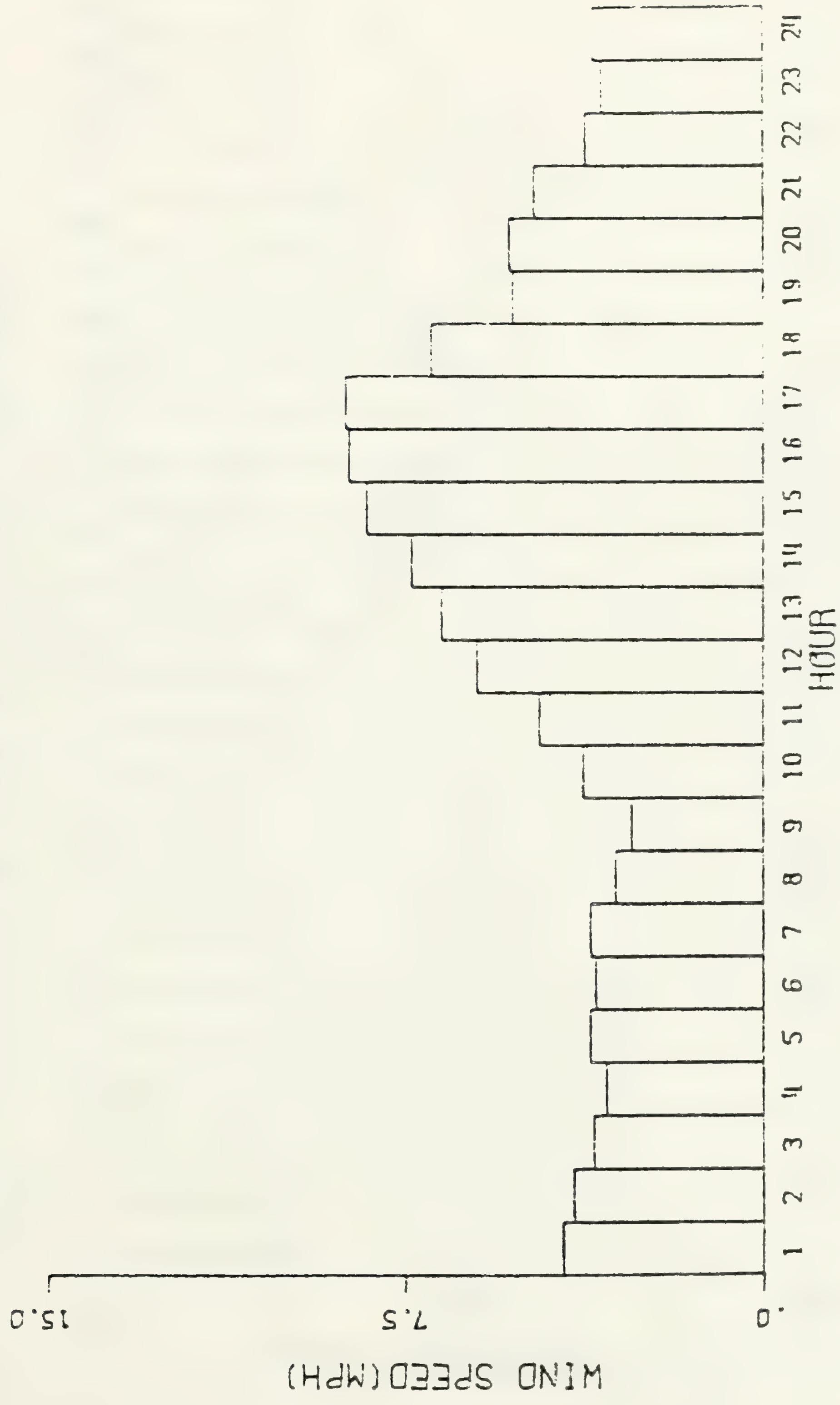


DIURNAL VARIATION OF OZONE (UG/M**3)
SITE - 23

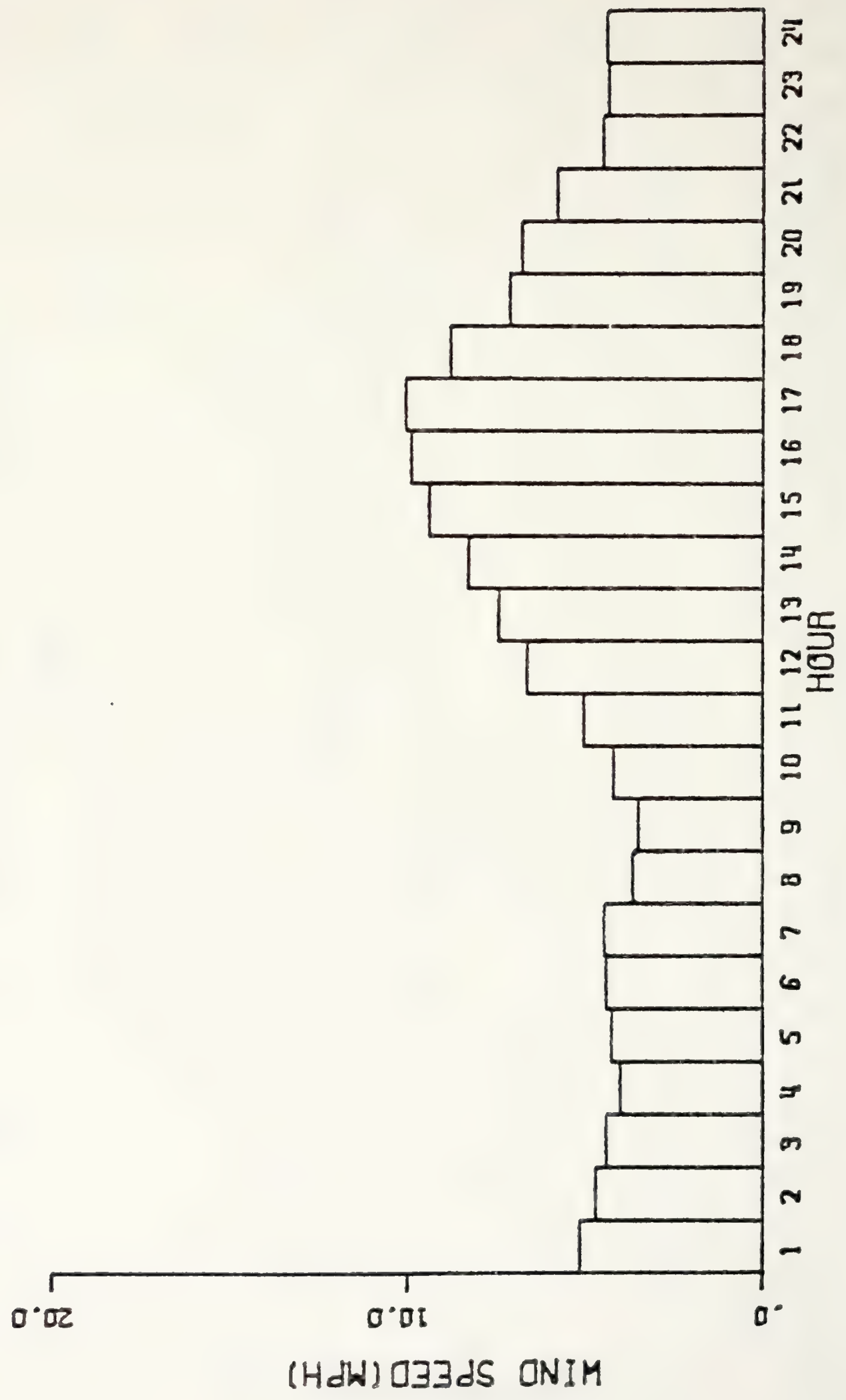

HOURLY TOTAL PRECIPITATION (HUNDREDTHS OF INCHES)
SITE - 23
HOUR
0.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
PRECIPITATION
0.
150.0
300.0



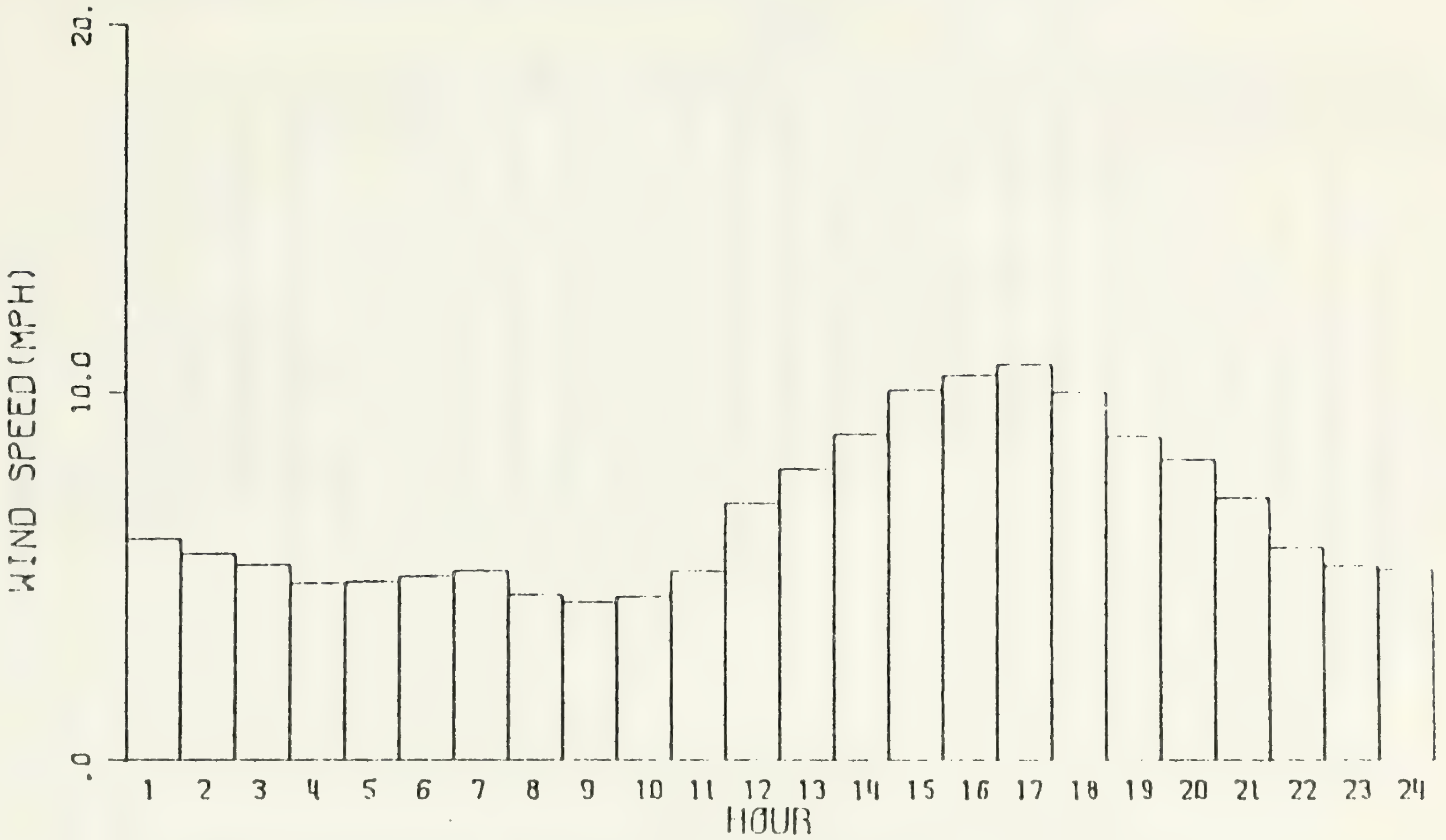
DIURNAL VARIATION OF WIND SPEED AT 8 FEET (MPH)
SITE - 23



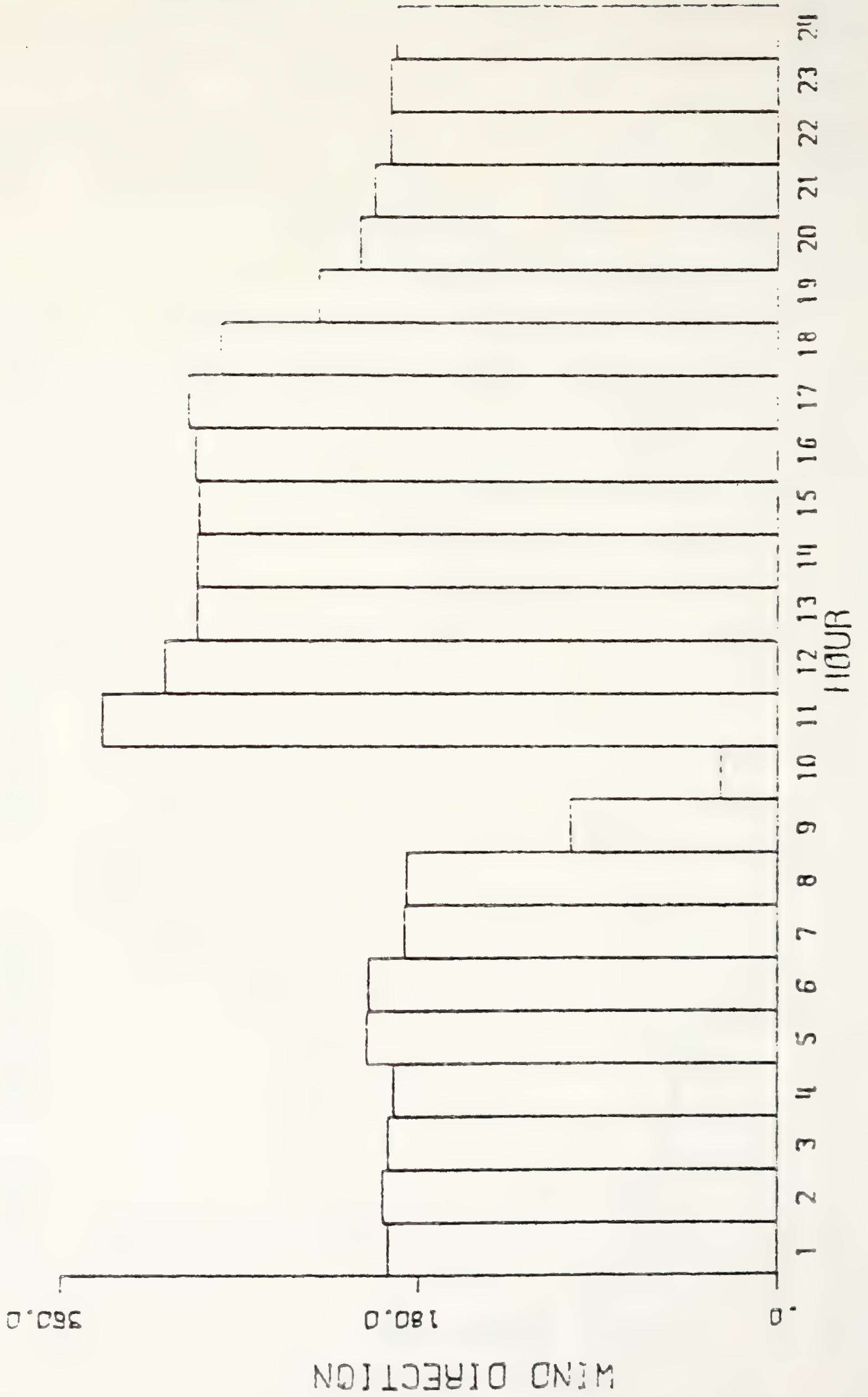
DIURNAL VARIATION OF WIND SPEED AT 30 FEET(MPH)
SITE - 23



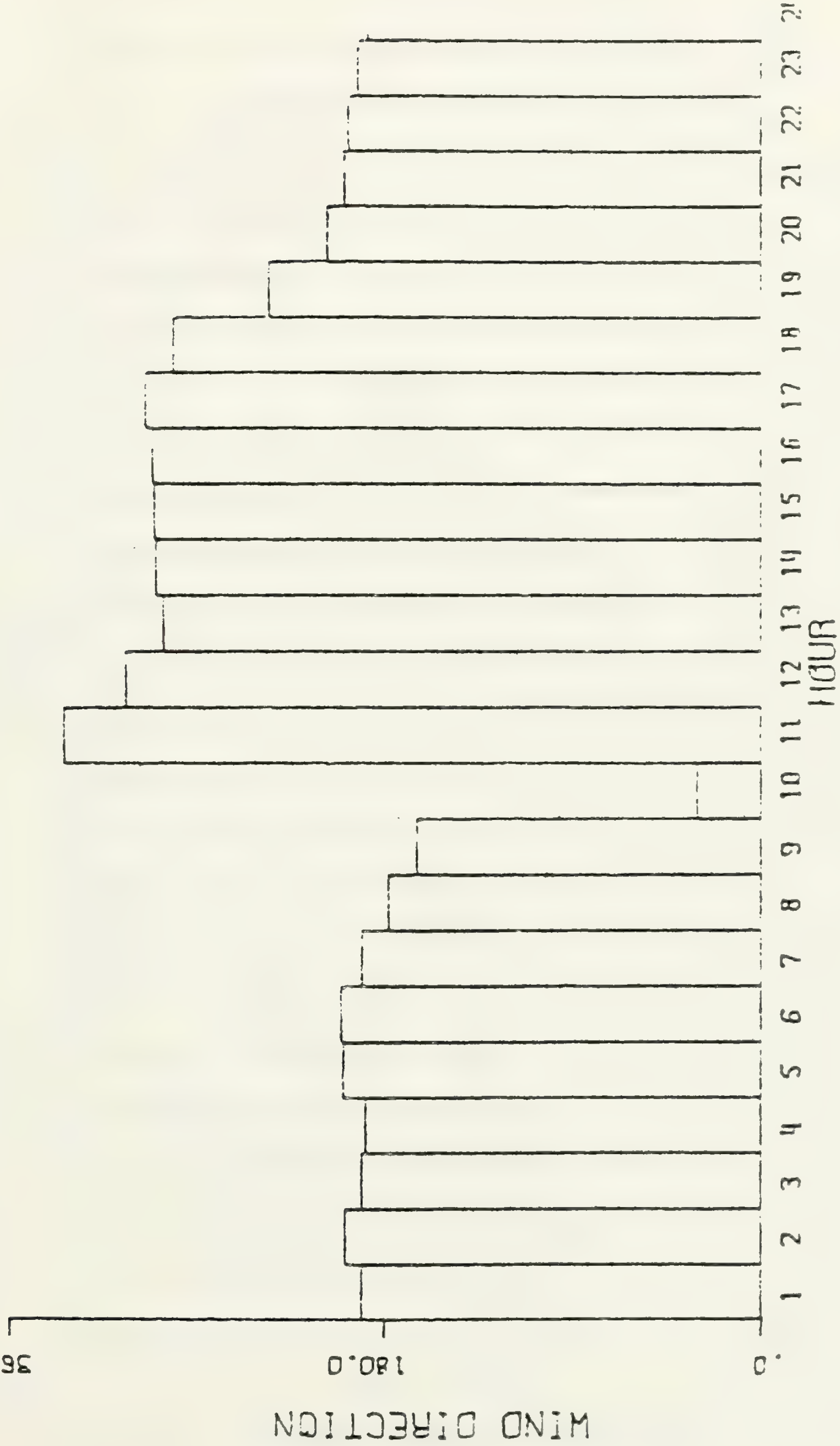
DIURNAL VARIATION OF WIND SPEED AT 100 FEET(MPH)
SITE - 23



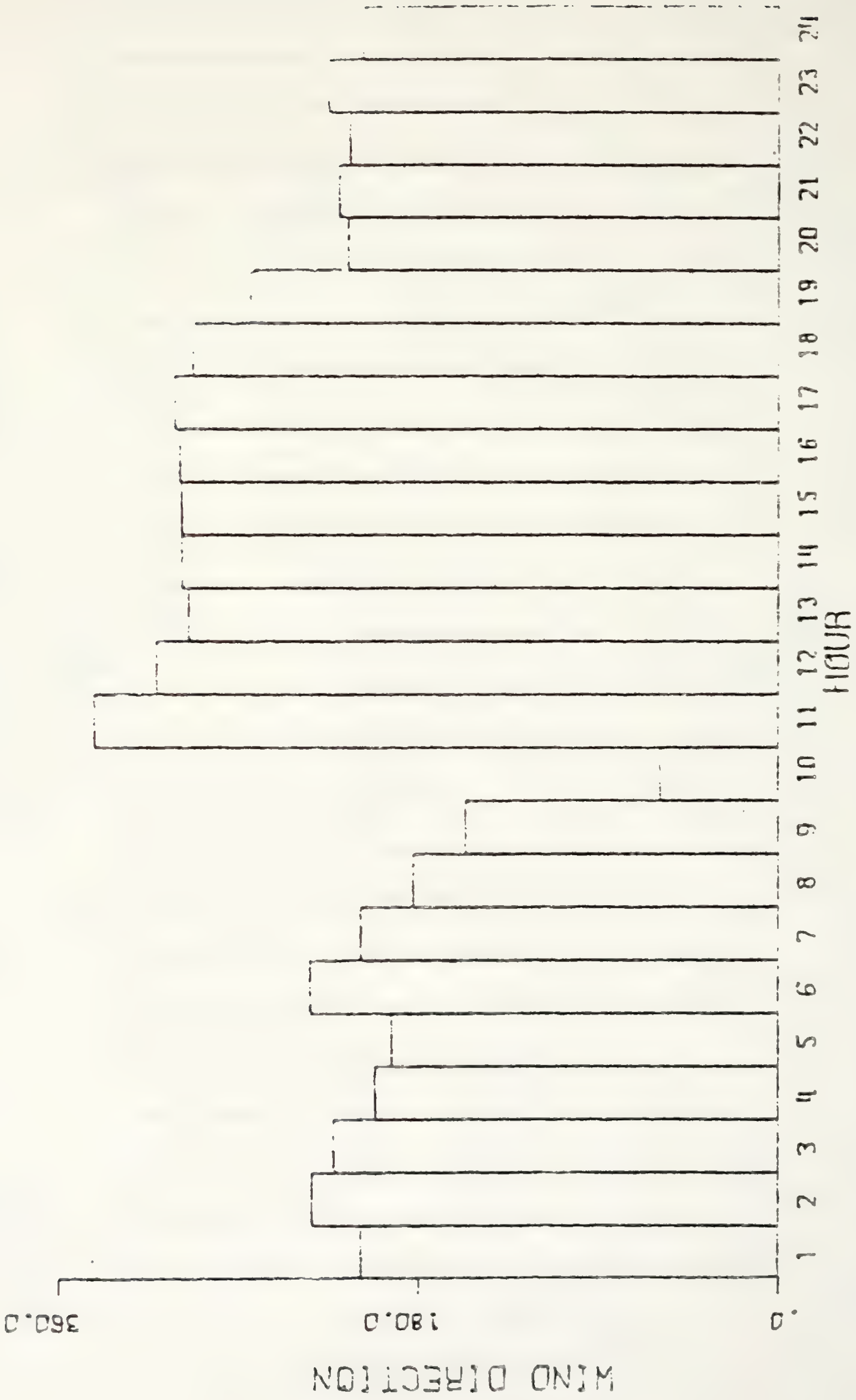
DIURNAL VARIATION OF WIND SPEED AT 200 FEET(MPH)
SITE - 23



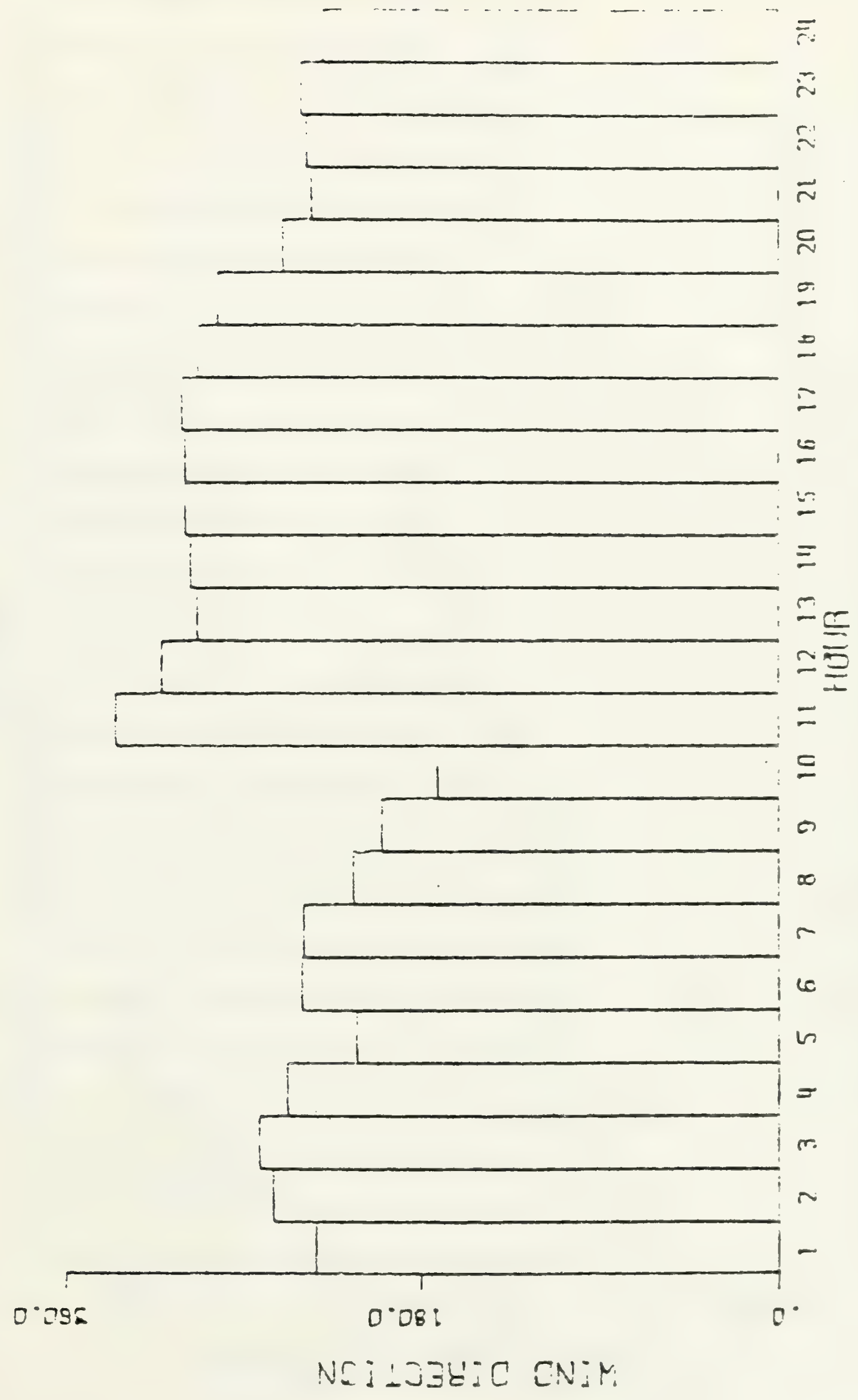
DIURNAL VARIATION OF WIND DIRECTION AT 8 FEET
SITE - 23



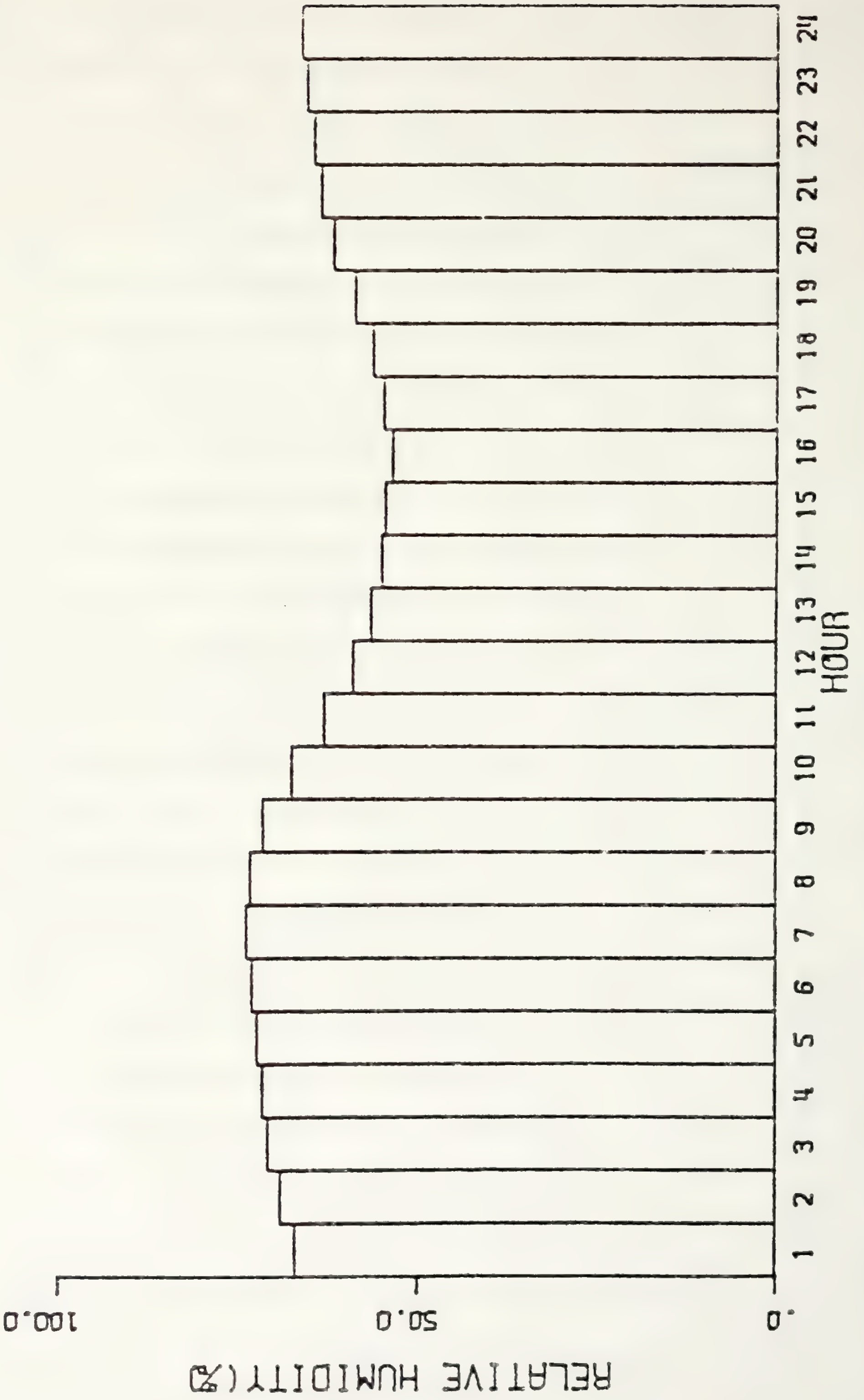
DIURNAL VARIATION OF WIND DIRECTION AT 30 FEET
SITE - 23



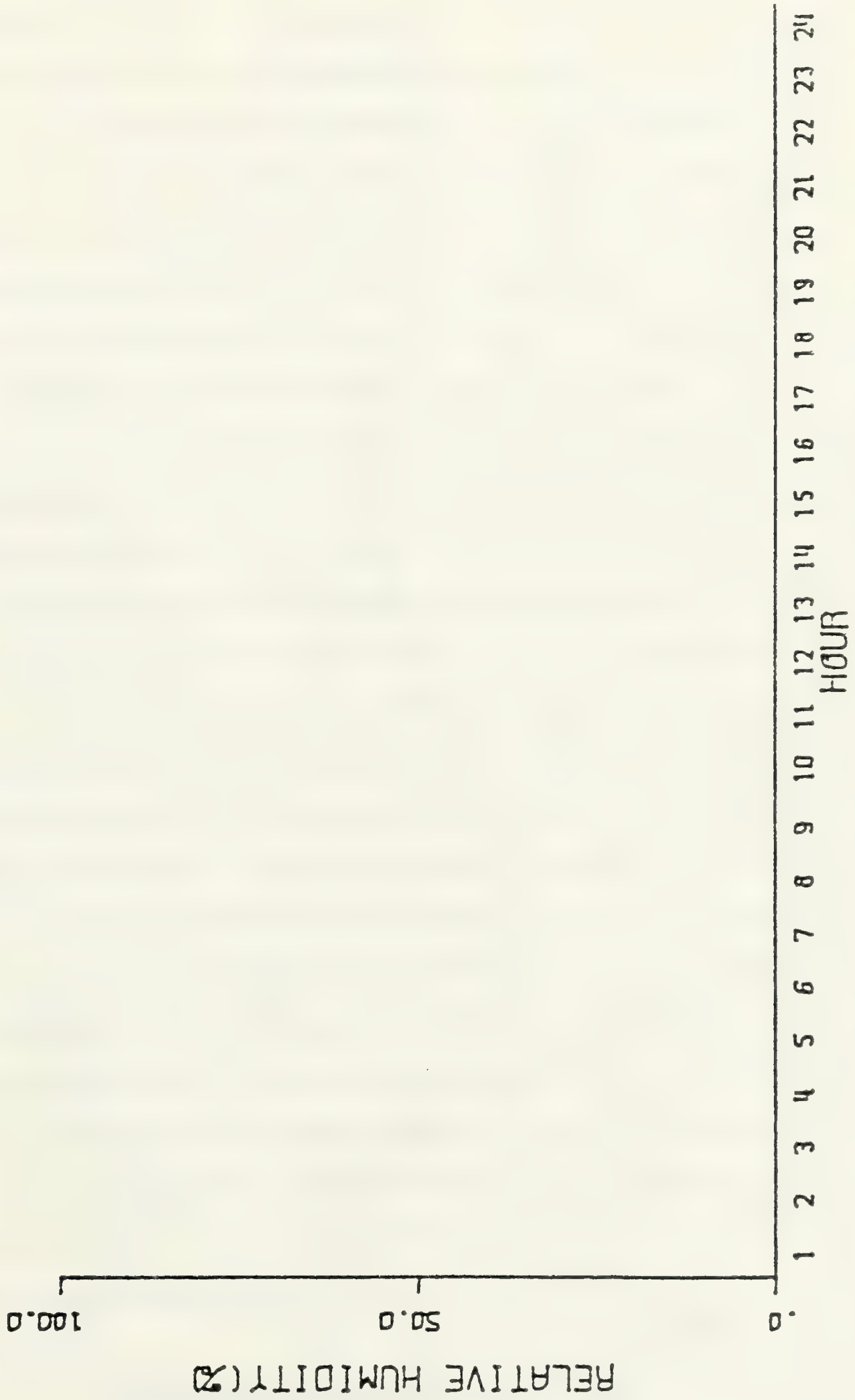
DIURNAL VARIATION OF WIND DIRECTION AT 100 FEET
SITE - 23



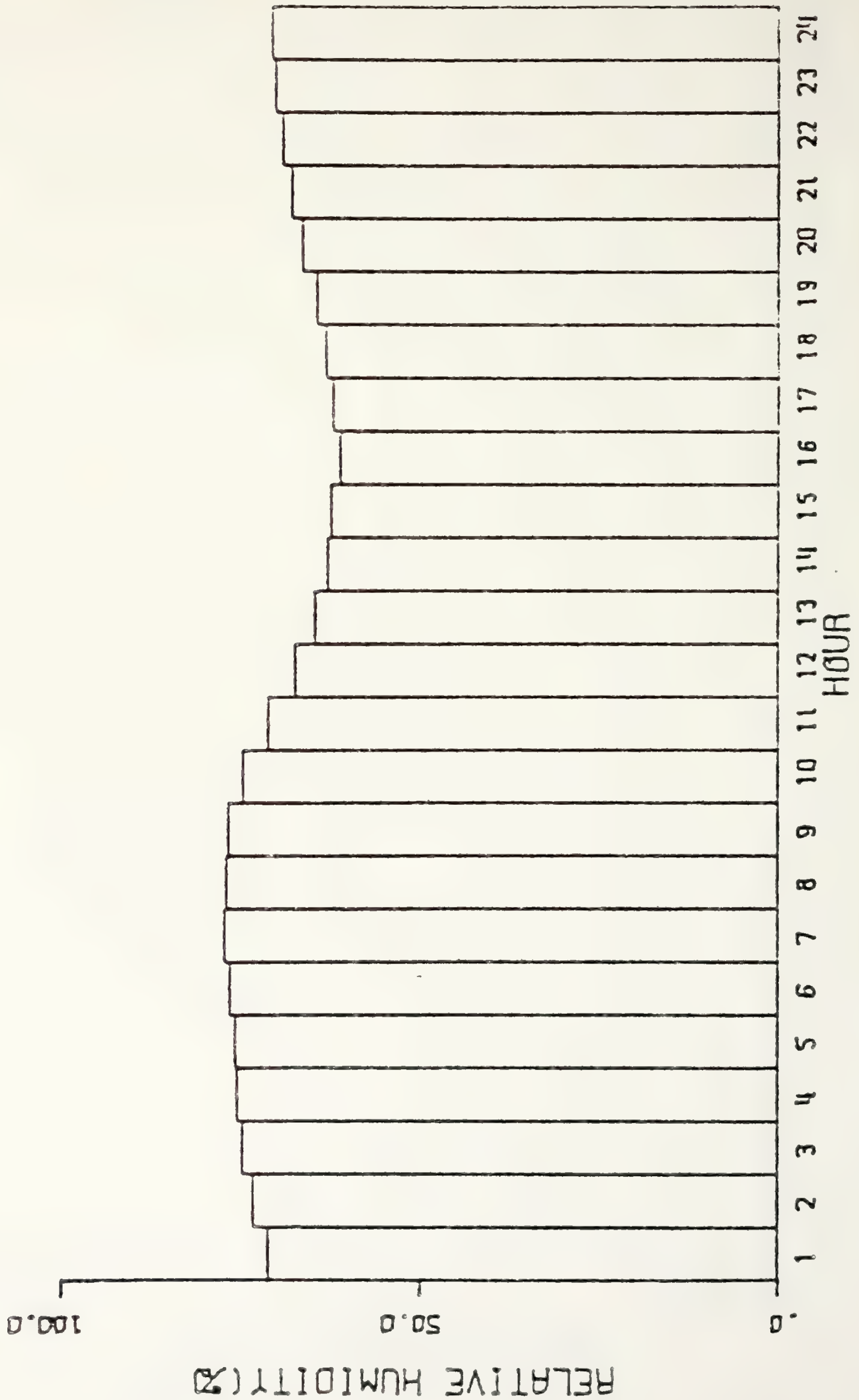
DIURNAL VARIATION OF WIND DIRECTION AT 200 FEET
SITE: 23



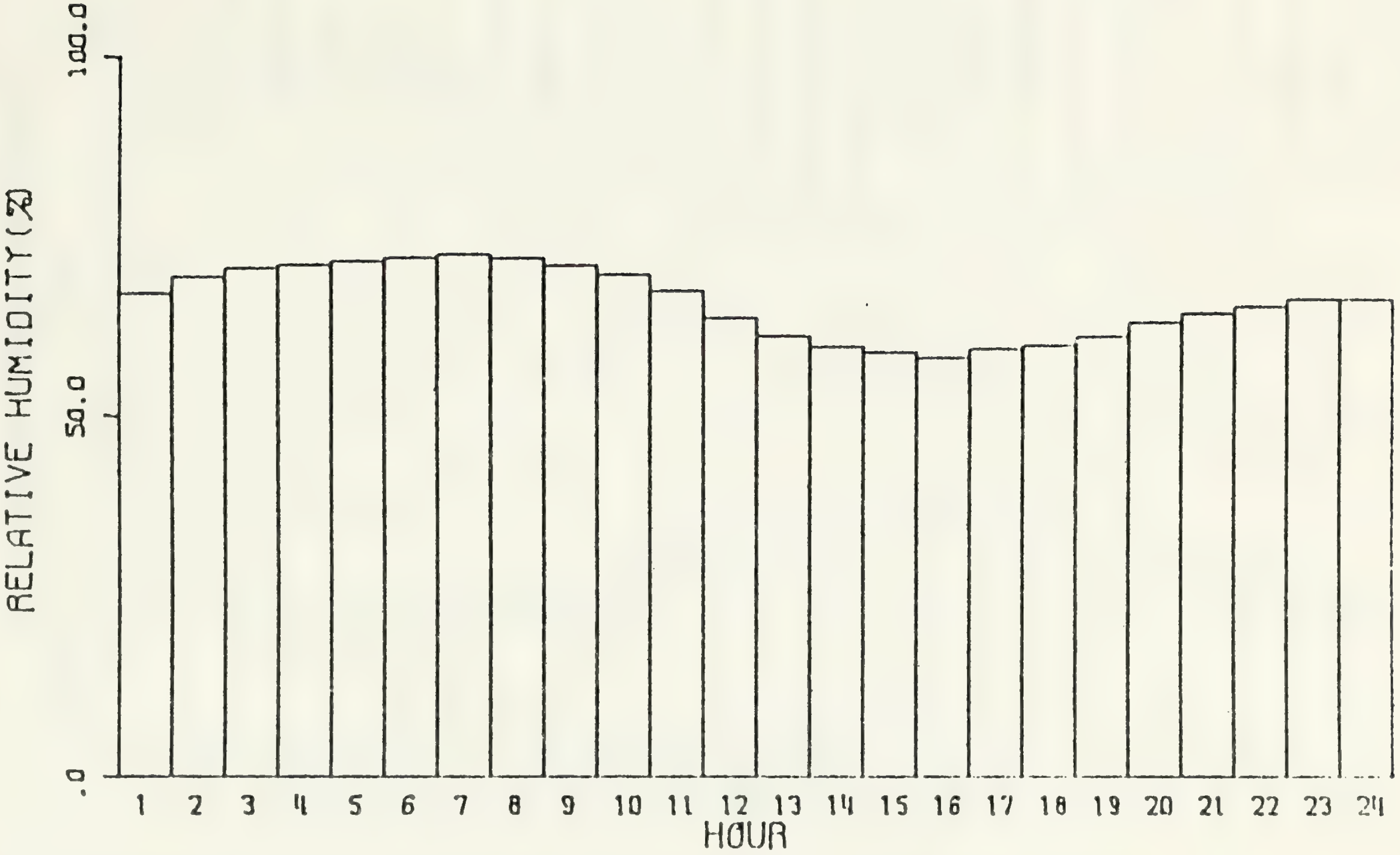
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 8 FEET
SITE - 23



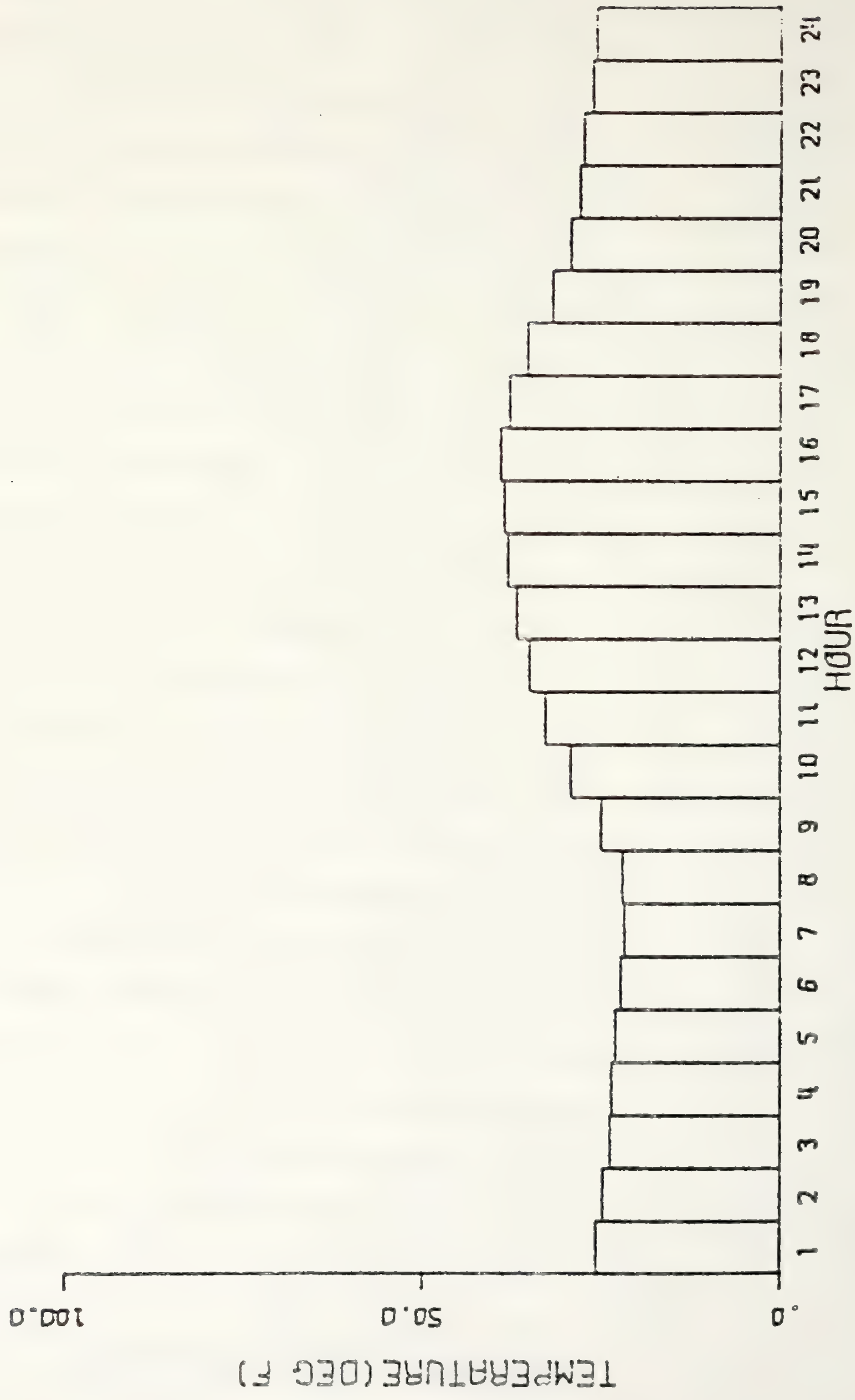
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 30 FEET
SITE - 23



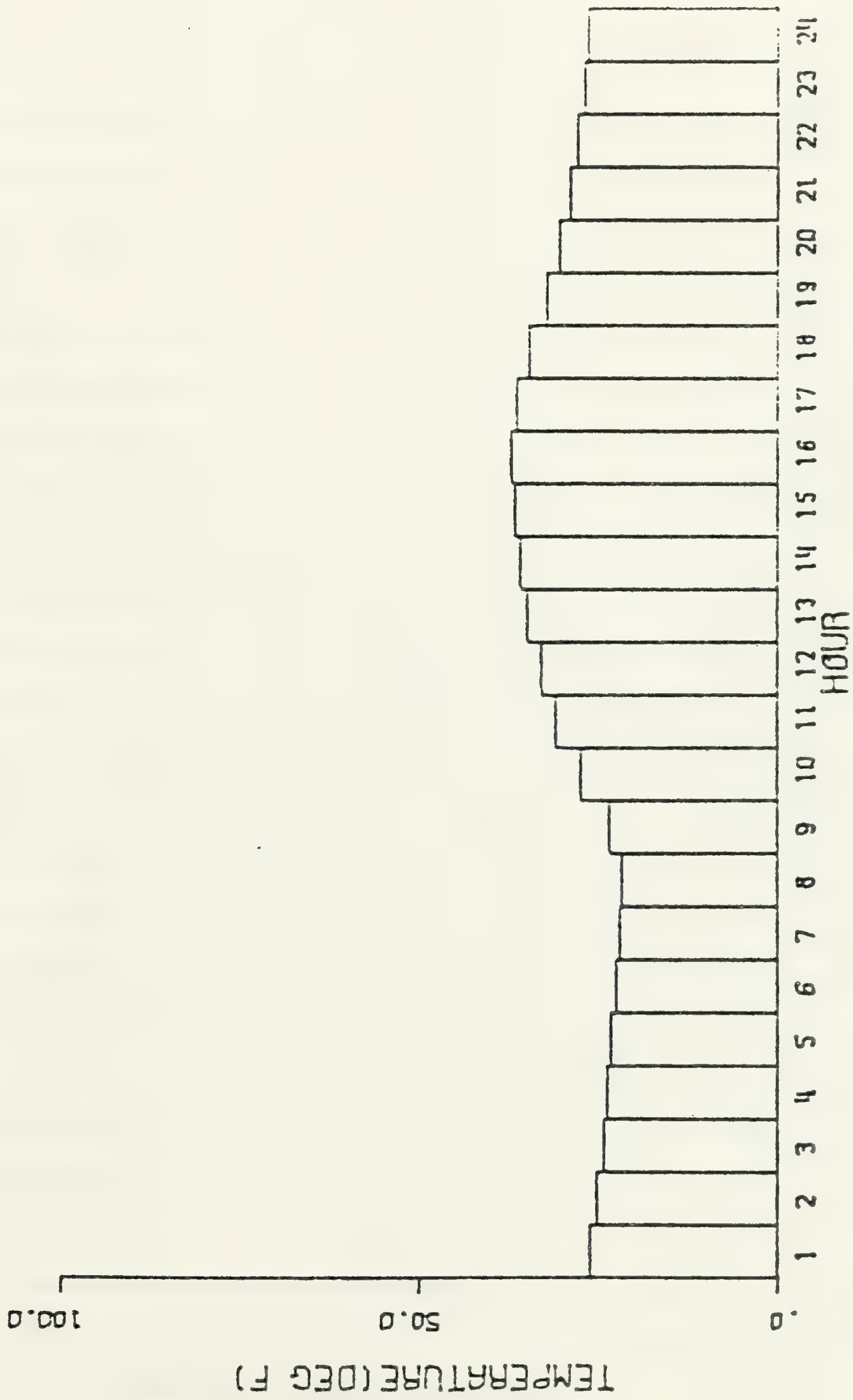
DIURNAL VARIATION OF RELATIVE HUMIDITY AT 100 FEET
SITE - 23



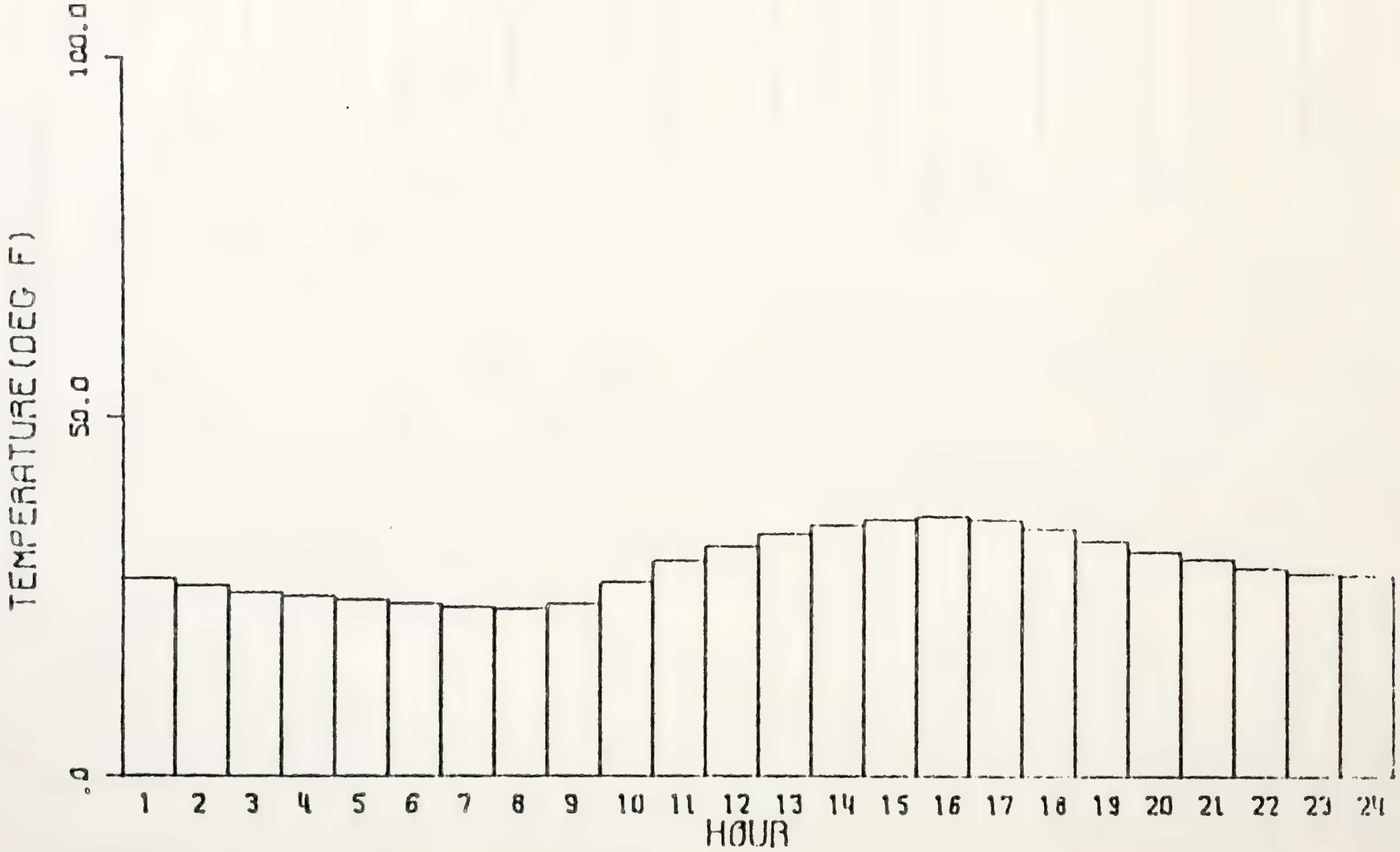
DIURNAL VARAITON OF RELATIVE HUMIDITY AT 200 FEET
SITE - 23



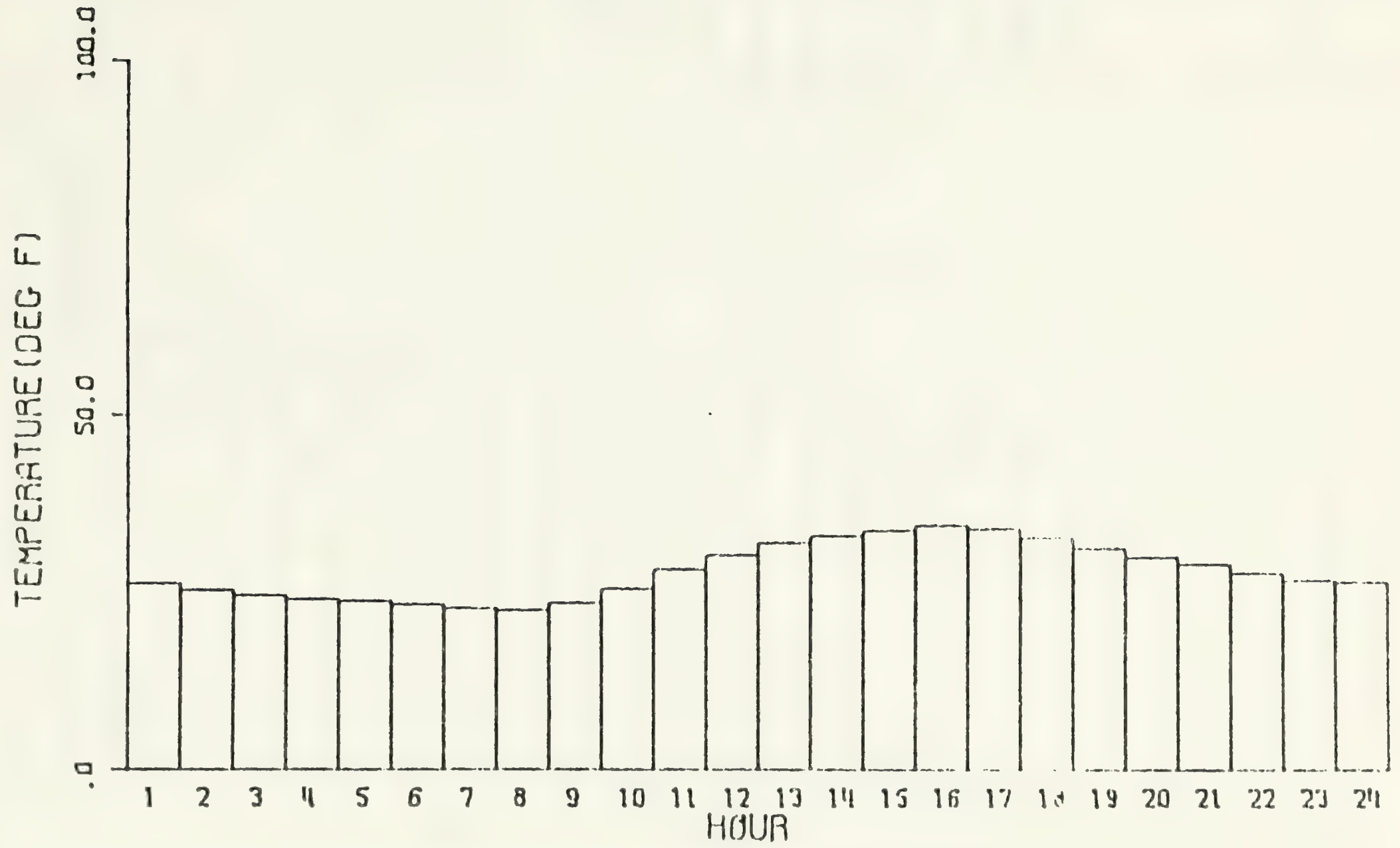
DIURNAL VARIATION OF TEMPERATURE AT 8 FEET (DEG F)
SITE - 23



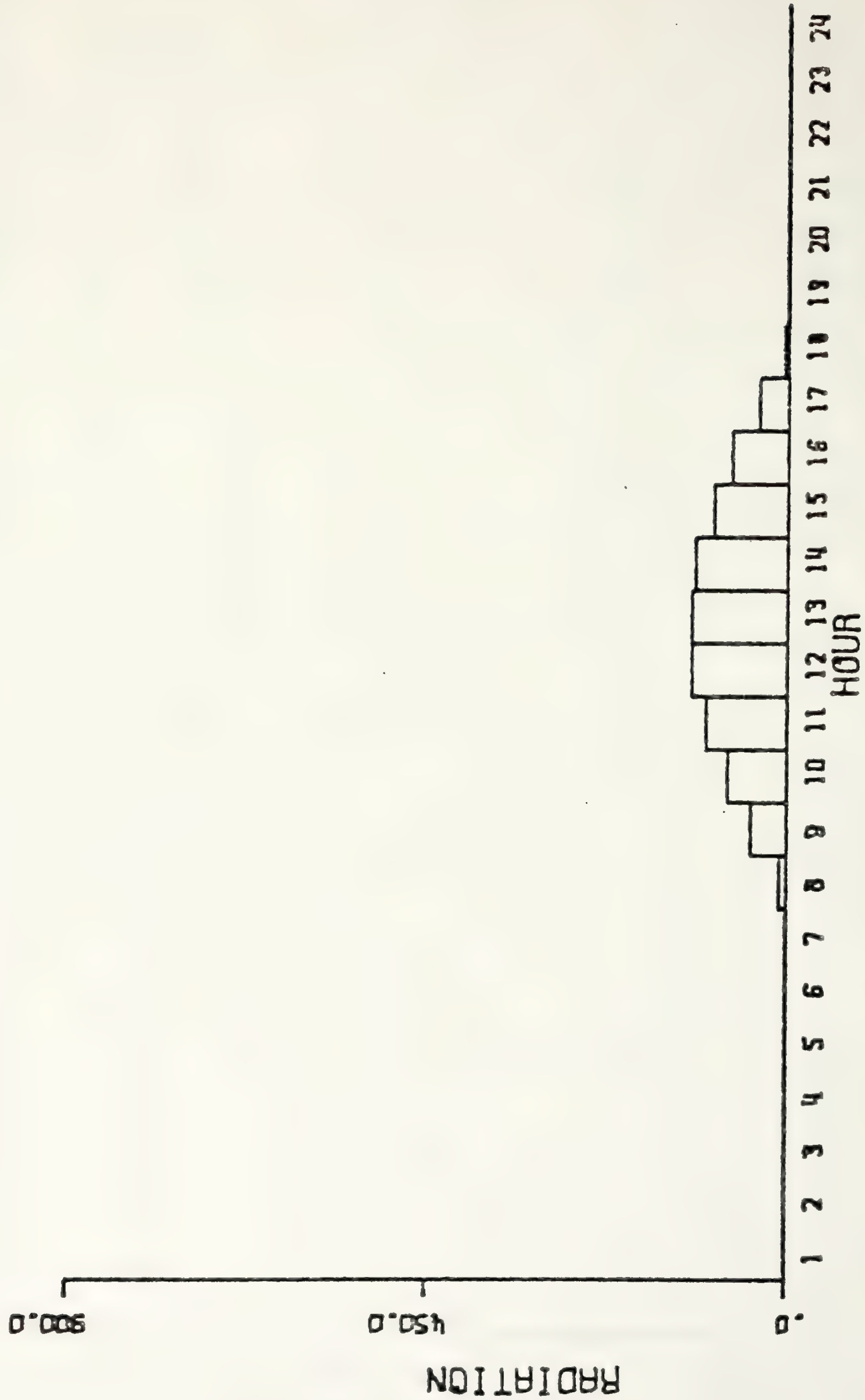
DIURNAL VARIATION OF TEMPERATURE AT 30 FEET (DEG F)
SITE - 23



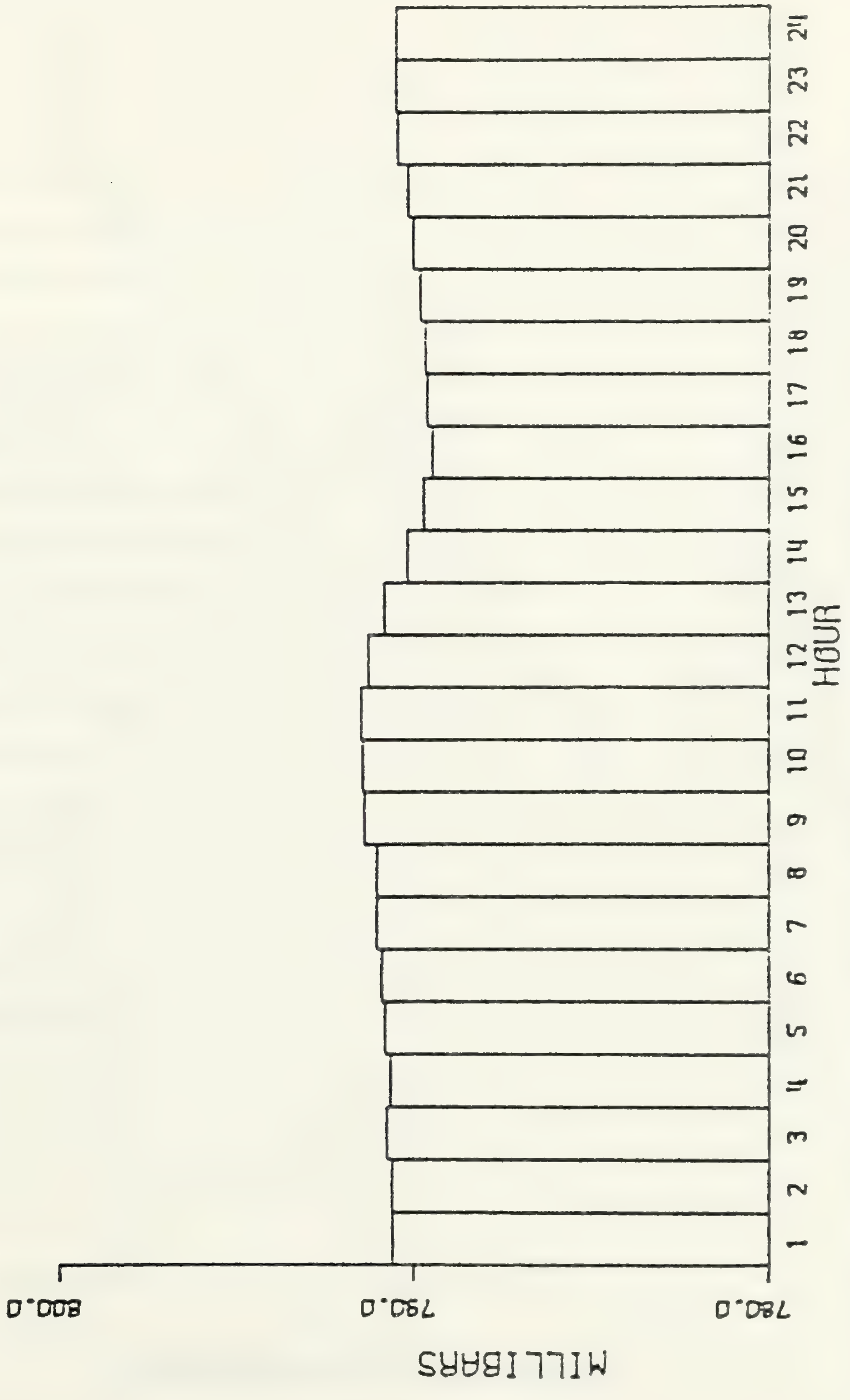
DIURNAL VARIATION OF TEMPERATURE AT 100 FEET (DEG F)
SITE - 23



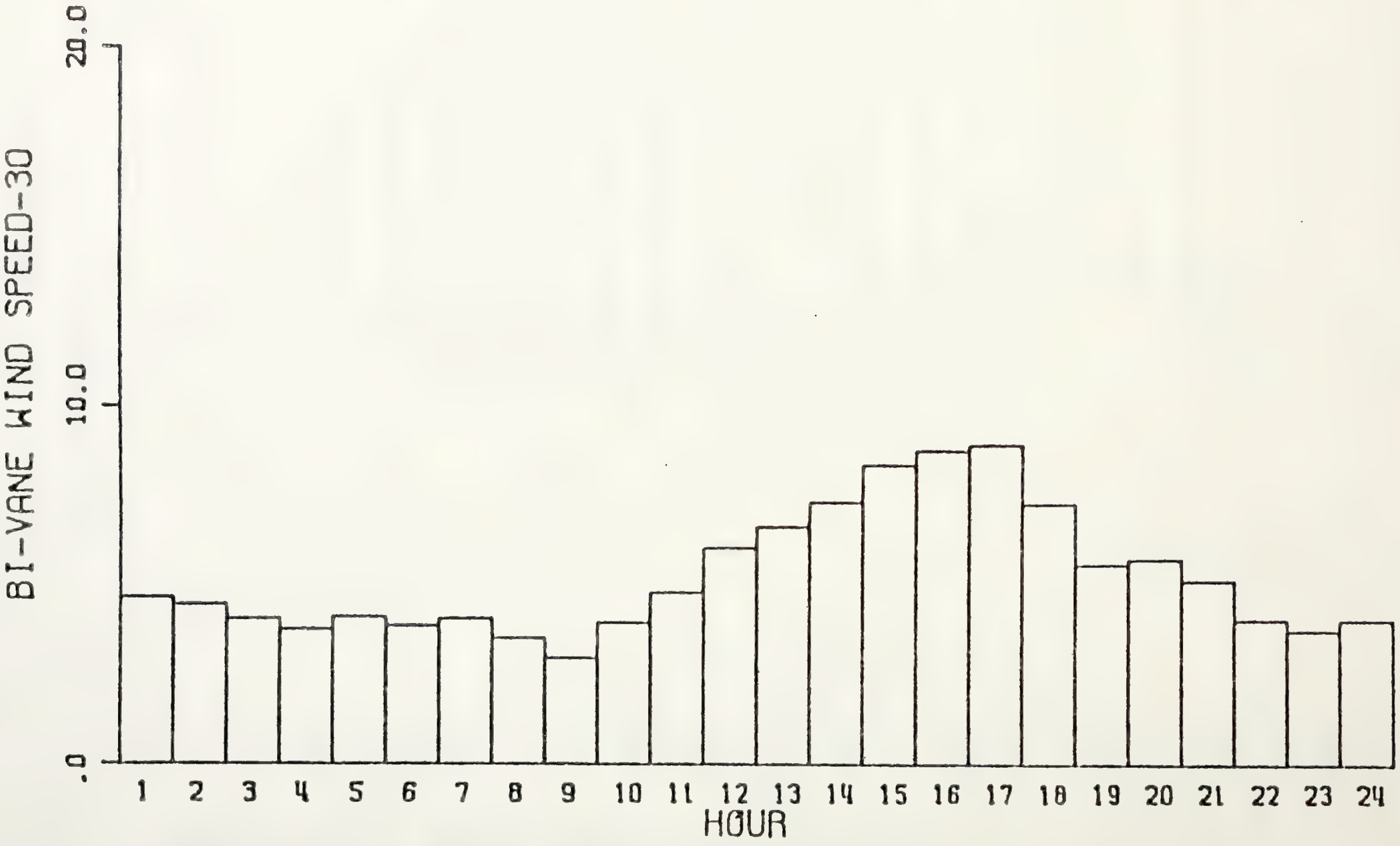
DIURNAL VARIATION OF TEMPERATURE AT 200 FEET (DEG F)
SITE - 23



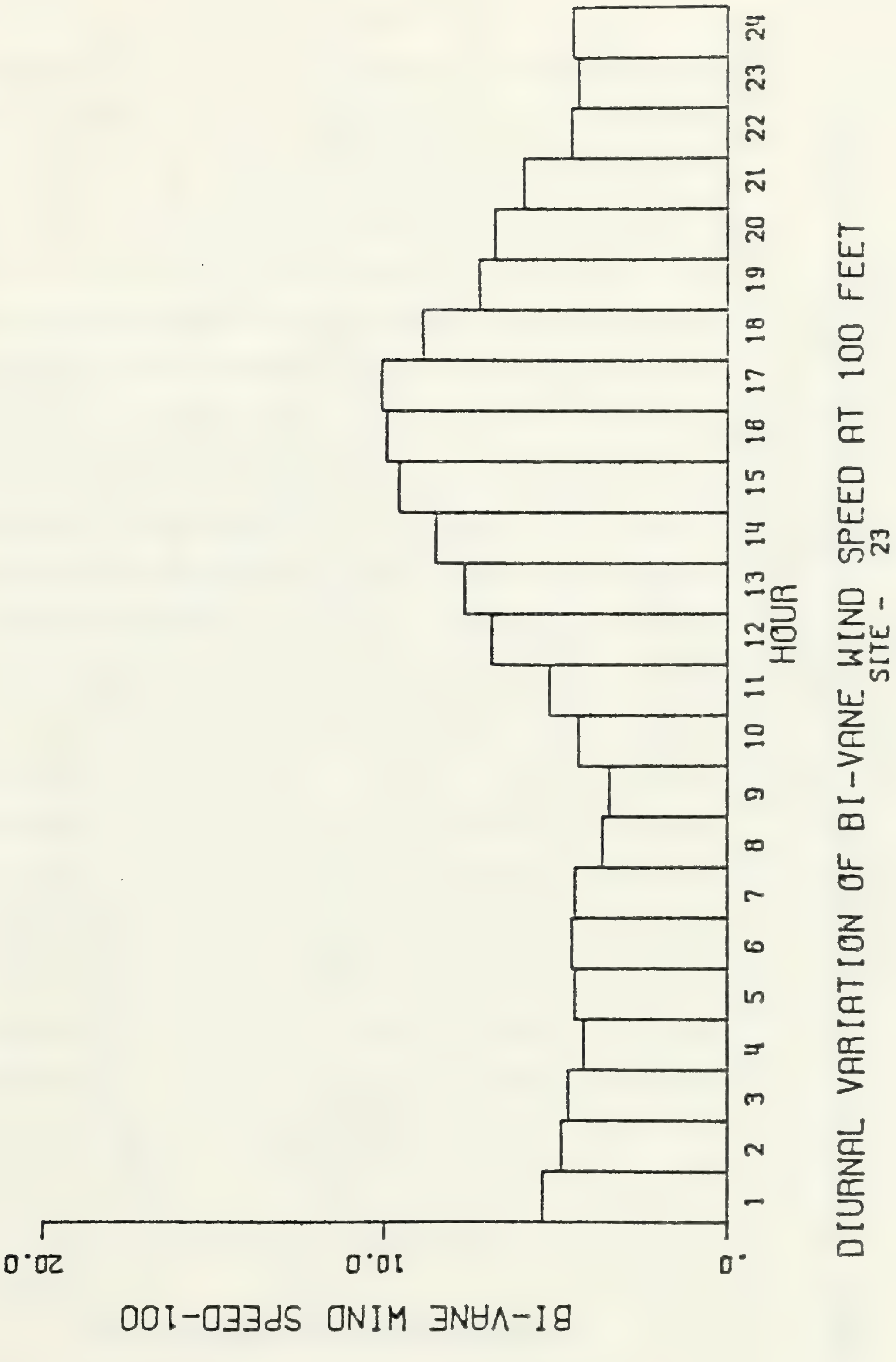
HOURLY TOTAL SOLAR RADIATION (LANGLEY)
SITE - 23



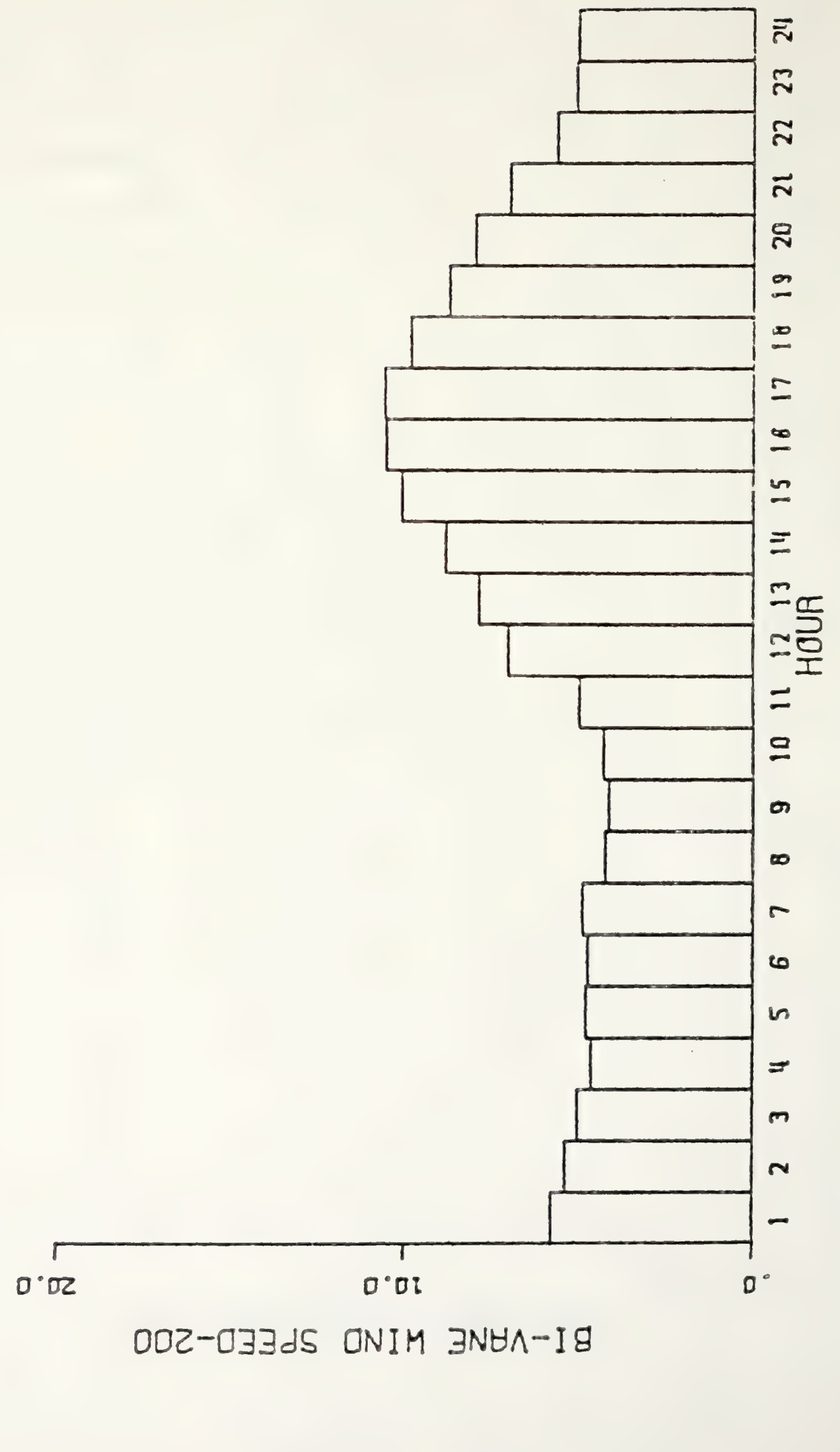
DIURNAL VARIATION OF BAROMETRIC PRESSURE
SITE - 23



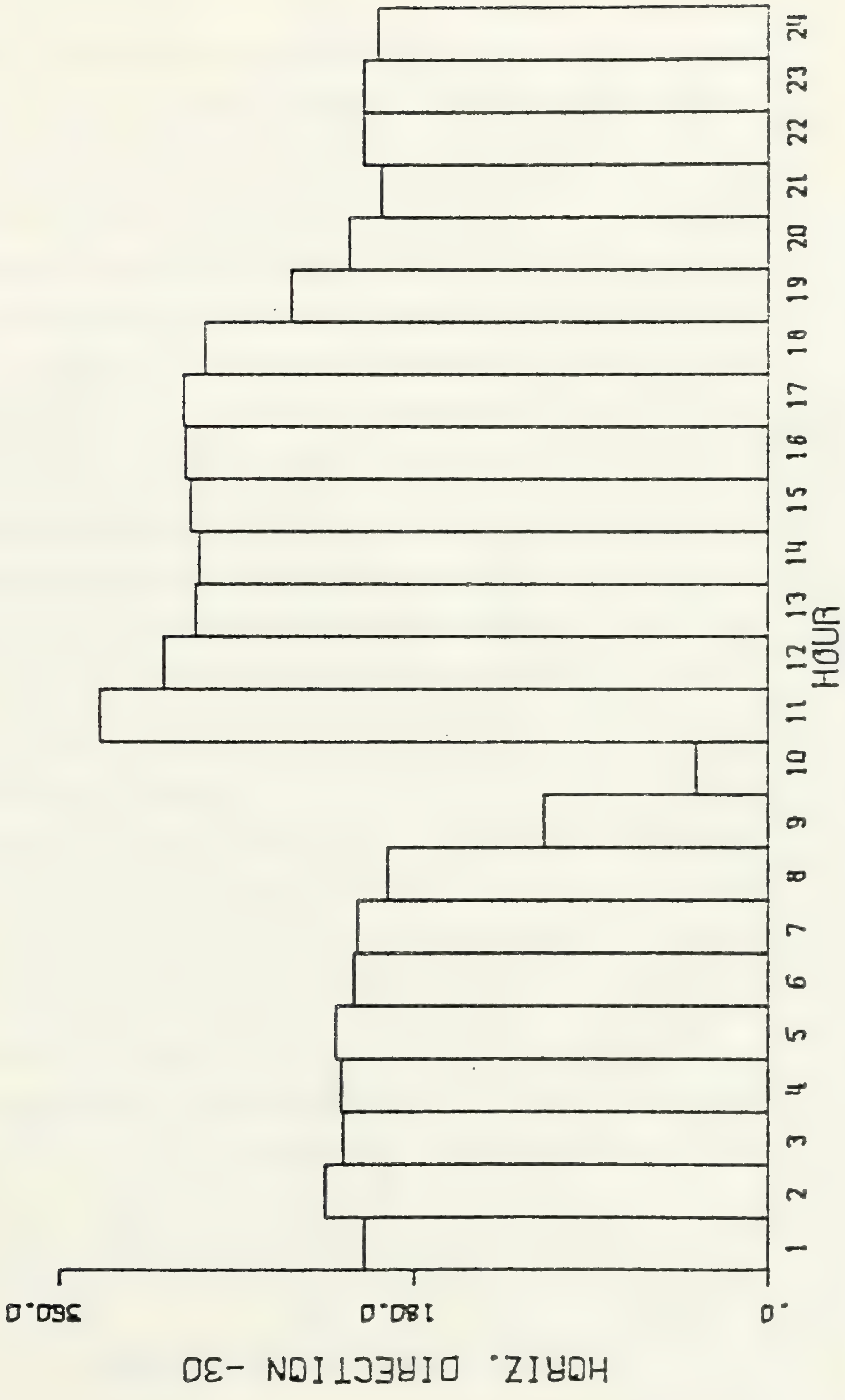
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 30 FEET
SITE - 23



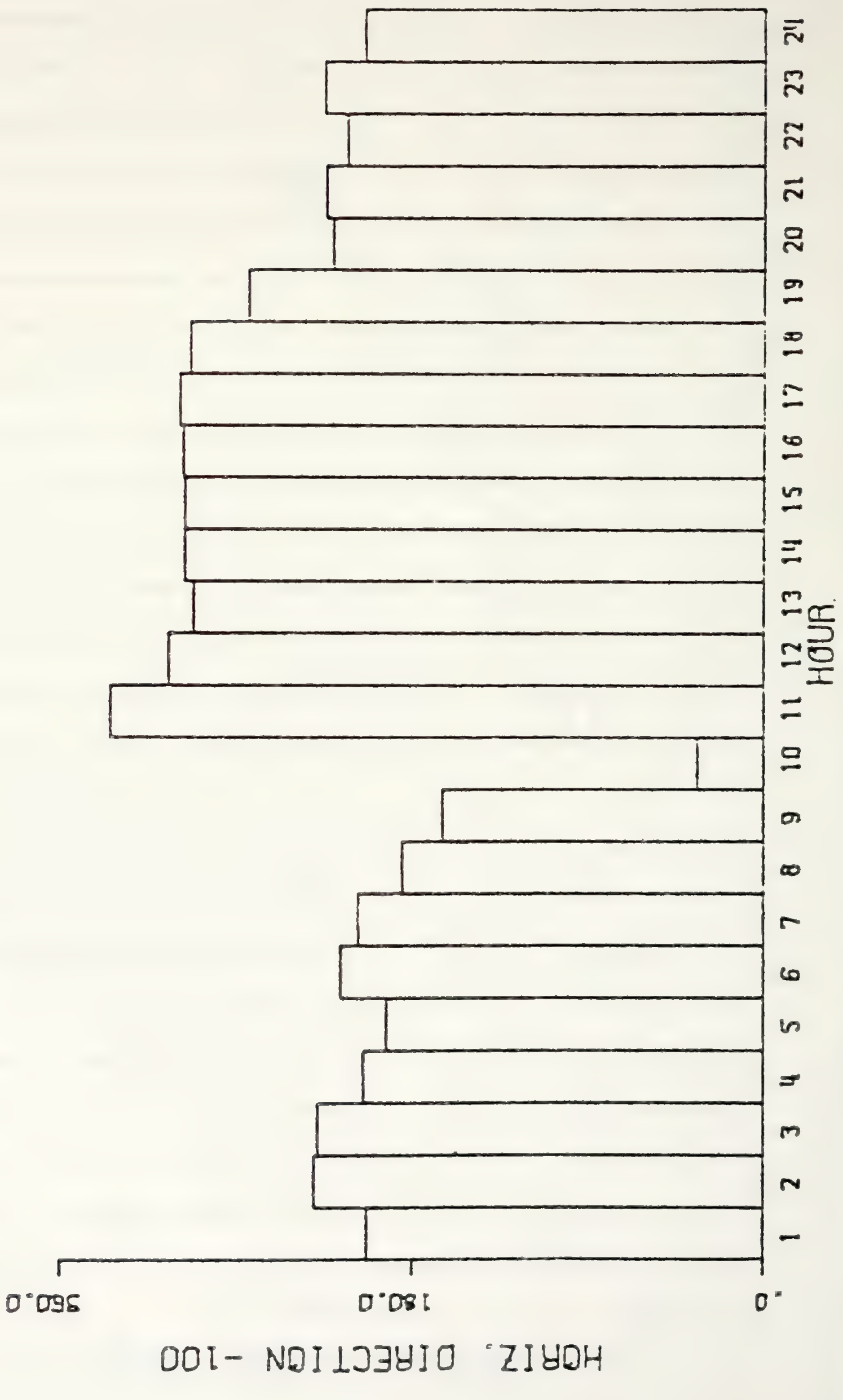
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 100 FEET
SITE - 23



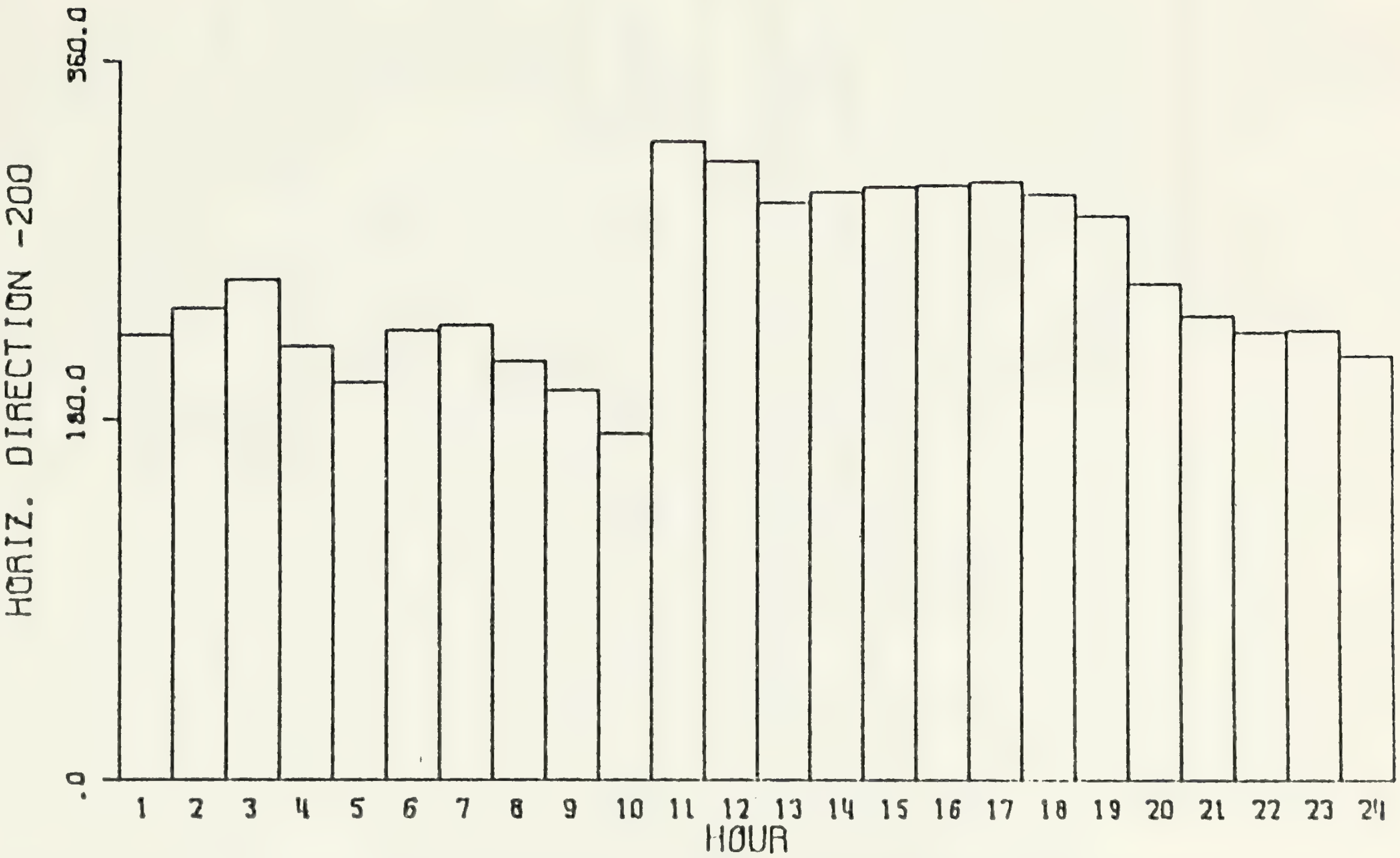
DIURNAL VARIATION OF BI-VANE WIND SPEED AT 200 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 30 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 100 FEET
SITE - 23



DIURNAL VARIATION OF HORIZONTAL BI-VANE WIND DIRECTION AT 200 FEET
SITE - 23

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                         C-b SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                      STABILITY CLASS DETERMINATION USING PYRANOMETER RECORDING
                                   PERIOD( 2/ 1/76 TO  2/28/76)

                                             HOUR
          1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

 2/ 1                                 C   C   C   C   C   C   C   B   D   D
 2/ 2                                     C   D   C   B   B   C   D   D   D
 2/ 3                                 C   C   C   C   B   C   B   B   C   D   C
 2/ 4                                 C   C   C   C   B   C   C   C   C   D   D
 2/ 5                                 C   C   C   B   C   C   C   C   C   D   C
 2/ 6                                 C   C   C   C   C   C   C   C   C   D   C
 2/ 7                                 C   C   C   C   C   B   C   C   C   D   C
 2/ 8                                 C   C   B   C   C   B   B   B   C   D   D
 2/ 9                                 C   C   C   B   C   C   C   C   C   D   D
 2/10                                 C   C   B   C   C   C   C   C   C   D   D
 2/11                                 C   C   C   C   C   C   D   D   D   D   D
 2/12                                 C   C   B   B   B   B   C   B   B   D   D
 2/13                                 D   C   C   C   B   C   C   C   C   D   D
 2/14                                 C   C   C   C   C   C   D   C   C   D   C
 2/15                                 C   C   C   B   B   C   C   C   C   D   D
 2/16                                 C   C   C   C   C   C   C   C   D   D   D
 2/17                                 C   C   C   B   C   C   C   C   C   D   D
 2/18                                 C   C   B   B   C   B   C   C   D   D   D
 2/19                                 C   C   B   B   C   C   C   C   C   D   D
 2/20                                 C   C   C   B   C   B   C   C   C   D   D
 2/21                                 C   C   B   C   D   D   D   D   D   D   D
 2/22                                 C   D   D   C   D   D   D   D   D   D   D
 2/23                                 C   C   C   B   B   C   C   D   D   D   D
 2/24                                 D   D   D   C   C   C   D   D   C   D   D
 2/25                                 D   D   D   C   C   D   D   D   D   D   D
 2/26                                 C   B   C   C   C   C   D   D   C   C   C
 2/27                                 C   C   C   B   A   C   B   B   C   D   D
 2/28                                 D   C   C   C   B   B   C   C   C   D   D

* NON-ZERO PYRANOMETER READING BUT STABILITY CLASS UNCERTAIN SINCE NIGHTTIME NET RADIATION INDEX IS REQUIRED
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1	F	F	F	F	F	F	F	F	F	E	B	C	B	A	A	B	B	D	D	D	D	D	E	E
2/ 2	D	D	D	D	D	D	D	D	D	B	A	A	A	B	B	B	C	D	E	F	F	F	F	F
2/ 3	F	F	F	F	F	F	F	F	F	C	A	A	B	A	B	B	B	D	F	F	F	F	F	F
2/ 4	F	F	F	F	F	F	F	E	E	B	B	A	B	B	B	B	C	E	E	F	F	F	F	F
2/ 5	F	F	F	F	F	F	F	F	F	E	B	B	B	B	B	A	B	E	E	F	F	F	F	F
2/ 6	E	F	F	F	F	F	F	F	E	D	B	B	B	B	B	B	B	D	F	F	F	F	F	F
2/ 7	F	F	F	F	F	F	F	F	F	D	B	A	A	B	B	B	B	D	F	F	F	F	F	F
2/ 8	F	F	F	F	F	F	F	F	F	D	A	A	A	A	A	B	B	E	F	F	F	F	F	F
2/ 9	F	F	F	F	F	F	F	F	E	B	A	B	B	B	B	B	B	E	F	F	E	F	F	F
2/10	F	F	F	F	F	F	F	F	E	A	A	B	B	B	B	B	B	D	F	E	F	F	F	F
2/11	F	F	F	F	F	F	F	F	F	D	D	B	B	C	C	C	B	D	D	F	F	F	F	F
2/12	F	F	F	F	F	F	F	F	F	E	A	B	A	B	A	A	B	D	F	F	F	F	F	F
2/13	F	F	F	F	F	F	F	F	F	F	E	A	A	B	B	B	B	D	E	E	E	E	E	F
2/14	F	F	F	F	E	F	E	E	C	A	A	B	C	D	B	F	B	D	E	F	F	F	F	F
2/15	F	F	F	E	F	F	F	F	F	B	A	A	B	B	B	B	B	D	F	F	F	F	F	F
2/16	F	F	F	F	F	F	F	F	F	F	A	A	A	A	B	C	C	D	D	E	F	F	F	F
2/17	F	F	F	F	F	F	F	F	F	D	A	B	B	B	B	C	B	D	F	F	F	F	F	F
2/18	E	F	F	F	F	F	F	F	F	D	A	B	A	B	B	B	B	D	E	F	F	F	F	F
2/19	F	F	F	F	F	F	F	F	F	B	A	B	B	B	B	B	B	D	E	F	F	F	F	F
2/20	F	F	F	F	F	F	F	F	F	D	A	B	A	B	B	B	B	D	E	F	F	F	F	F
2/21	F	F	F	F	F	F	F	F	F	A	B	D	C	C	C	B	D	D	D	D	D	D	D	D
2/22	D	D	D	D	D	D	D	E	D	D	D	C	B	B	B	B	D	D	D	D	E	D	D	D
2/23	D	E	E	E	F	F	F	F	A	B	A	A	B	B	C	C	C	D	D	E	D	E	E	E
2/24	D	E	E	F	D	D	D	D	D	D	C	B	B	C	C	C	C	D	D	E	E	E	F	D
2/25	D	D	D	D	D	D	D	D	C	B	B	B	C	D	D	D	D	D	E	F	F	F	F	F
2/26	F	F	F	F	F	F	F	F	E	B	B	B	B	B	B	C	C	D	D	D	D	E	F	F
2/27	F	F	F	F	E	F	E	E	B	A	A	A	B	A	A	B	B	D	E	E	E	F	F	E
2/28	E	F	F	F	F	F	F	F	E	B	B	B	B	B	B	B	B	D	F	D	E	F	F	F

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                          C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                     STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                  PERIOD( 2/ 1/77 TO  2/28/77)

                                   HOURLY WIND AND DIRECTION
                                       A STABILITY CLASS

                                                HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24


2/ 1                                                            2   3
                                                              ENE  NE
2/ 2                                                4   3   2
                                                   NW WNW WSW
2/ 3                                                2   2       3
                                                  NNE   N       N
2/ 4                                                    3
                                                       NW
2/ 5                                                                    3
                                                                       SW
2/ 6

2/ 7                                                    2   3
                                                      NNW WNW
2/ 8                                                2   2   3   2   3
                                                  NNE NNE   W  SW  SW
2/ 9                                                3
                                                   NW
2/10                                            2   2
                                                W WNW
2/11

2/12                                                3       4       3   3
                                                  ENE      SW     SSW  SW
2/13                                                    3   2
                                                      NNW NNW
2/14                                            2   2
                                                W  NW
2/15                                                2   4
                                                  ESE NNW
2/16                                                2   2   2   2
                                                    E NNW   N SSE
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                            C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                          STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                     PERIOD( 2/ 1/77 TO  2/28/77)

                                       HOURLY WIND AND DIRECTION
                                           A STABILITY CLASS

2/17                                            4
                                               NW
2/18                                            4       3
                                              ENE     ENE
2/19                                            3
                                                N
2/20                                            3       4
                                                N     WSW
2/21                                        2
                                          WSW
2/22

2/23                                    1       4   3
                                      SSW     NNW  NW
2/24

2/25

2/26

2/27                                        2   3   2       3   4
                                          NNE   N NNW     NNW WNW
2/28
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
PERIOD(2/ 1/77 TO 2/28/77)

HOURLY WIND AND DIRECTION
B STABILITY CLASS

	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1											1 NNE		2 S			4 [illegible]	7 WNW							
2/ 2										5 NW				4 WNW	7 NW	7 NNW								
2/ 3													4 NNE		4 NW	6 NNW	5 NNW							
2/ 4										1 WSW	3 WNW		5 NW	7 NW	7 NW	8 NW								
2/ 5											4 SSW	6 SSW	8 SSW	7 SSW	5 SW		5 SSW							
2/ 6											4 NW	4 NW	5 NW	6 WNW	5 NW	6 NW	6 NW							
2/ 7											2 NE			5 NNW	6 NNW	5 NNW	4 N							
2/ 8																5 SW	5 SW							
2/ 9										0 N		5 WNW	7 WNW	7 NW	6 NNW	8 [illegible]	7 NNW							
2/10												5 NW	7 NW	7 NW	8 N	6 N	5 NNW							
2/11												7 NNW	10 NNW				9 NNE							
2/12												5 SSW		5 WSW			6 [illegible]							
2/13														5 NW	8 NNW	7 [illegible]	9 NW							
2/14												6 NNW			10 NNE	9 NNE	10 NE							
2/15										5 SE			6 NNW	6 NNW	8 NW	7 [illegible]	8 NW							
2/16															8 SW									

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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                  STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                           PERIOD( 2/ 1/77 TO  2/28/77)

                               HOURLY WIND AND DIRECTION
                                  B STABILITY CLASS

2/17                          7    8    8    9         9
                            WNW  WNW  WNW  WNW       WNW
2/18                          6         7    9    8   10
                             NE         N  NNW  NNW   NW
2/19               3          6    6    4    6    9    8
                   E          N   NW  NNW   NW   NW  NNW
2/20                          5         4    6    7   10
                             SW       WSW  WNW   SW   SW
2/21                     9
                        SW
2/22                               5    5   10   10
                                   W  WNW   NW  NNW
2/23               2               5    8
                 NNW               W   SW
2/24                          9   10
                            WNW    W
2/25              10   10    10
                 NNW  NNW     N
2/26               8   10    10   10    8    5
                 SSW  SSW   SSW   SW   SW  WNW
2/27          1                    5              7    9
            WNW                  NNW             SW  WNW
2/28               5    6     8    8    6    9   10    9
                 SSW   SW    SW   SW  SSW  SSW  SSW  SSW
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CORPORATION

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                     C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                 STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                           PERIOD( 2/ 1/77 TO  2/28/77)

                            HOURLY WIND AND DIRECTION
                               C STABILITY CLASS

                                                HOUR
           1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24

2/ 1                                                   4
                                                     WNW
2/ 2                                                                       6
                                                                           N
2/ 3                                       2
                                         ESE
2/ 4                                                                       7
                                                                          NW
2/ 5

2/ 6

2/ 7

2/ 8

2/ 9

2/10

2/11                                                        13  12  11
                                                             N   N   N
2/12

2/13

2/14                                   2            11
                                     SSW           NNW
2/15

2/16                                                                11  11
                                                                   SSW SSW
```

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                      C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                PERIOD( 2/ 1/77 TO  2/28/77)

                                 HOURLY WIND AND DIRECTION
                                    C STABILITY CLASS

2/17                                                                 11
                                                                    WNW
2/18

2/19

2/20

2/21                                                    12    12    14
                                                       SSW   SSW    SW
2/22                                              5
                                                  N
2/23                                                                12    12    11
                                                                    SW    SW    SW
2/24                                  11                      11    12    11    11
                                     WNW                       W     W     W     N
2/25                          9                         13
                             NW                          N
2/26                                                                       3     2
                                                                         WSW    SW
2/27

2/28
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                    C-b SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                   STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                             PERIOD( 2/ 1/77 TO  2/28/77)

                               HOURLY WIND AND DIRECTION
                                  D STABILITY CLASS

                                                           HOUR
            1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

2/ 1                                                                                         7    5    3    1    2
                                                                                           WNW  WNW  NNW    N    E
2/ 2        3    5    6    6    5    5    4    2    4                                        7
          WNW  WNW  WNW  WNW  WNW  WNW  WNW  WNW  WNW                                        N
2/ 3                                                                                         3
                                                                                            NW
2/ 4

2/ 5

2/ 6                                                 1                                       5
                                                   NNW                                      NW
2/ 7                                                 2                                       3
                                                     E                                     NNW
2/ 8                                                 2
                                                   ENE
2/ 9

2/10                                                                                         6
                                                                                            NW
2/11                                                 2    1                                  6    3
                                                    SW  NNW                                 NE  NNE
2/12                                                                                         9
                                                                                           SSW
2/13                                                                                         7
                                                                                            NW
2/14                                                                    13                   5
                                                                         N                  NE
2/15                                                                                         6
                                                                                           WNW
2/16                                                                                        13   14
                                                                                           SSW  SSW
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              C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
           STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                      PERIOD( 2/ 1/77 TO  2/28/77)

                        HOURLY WIND AND DIRECTION
                           D STABILITY CLASS

2/17                                                 1                                       5
                                                   ENE                                       W
2/18                                                 2                                      10
                                                   ENE                                      NW
2/19                                                                                         7
                                                                                            NW
2/20                                                 1                                      11
                                                    NE                                     SSW
2/21                                                           14                  15   16   10    9   24   25   20   12    8
                                                              SSW                 SSW  SSW    S    S  SSW  SSW  SSW   SW   SW
2/22   19   16   11    9    7    3    4         6    5    3                                12    7    6    8         9   10    8
       SW   SW    W  WNW  WNW    N  NNW         N   NE    N                               WNW  WNW    W    W         W    W    W
2/23    7                                                                                   11    8        10
        W                                                                                   SW   SW       WSW
2/24   13                  11   10   13    9    9   13                                       7    2                        3
       SW                   W  WSW    W    W    W    W                                       N   NW                      WNW
2/25    3    6    5    6    8    8    8    8                            16   15   17   14   10
      WNW   NW   NE   NW   NW  NNW  NNW   NW                             N    N    N    N    N
2/26                                                                                         2    5    7    9
                                                                                            SE    W    W  WNW
2/27                                                                                         5
                                                                                            NW
2/28                                                                                         9         12
                                                                                             S          S
```

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                          C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                                 PERIOD( 2/ 1/77 TO  2/28/77)

                                   HOURLY WIND AND DIRECTION
                                      E STABILITY CLASS

                                                        HOUR
          1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24

2/ 1                                                   2                                                                 1    1
                                                     ENE                                                               ENE   SE
2/ 2                                                                                                      9    6    5
                                                                                                          N    N  NNW
2/ 3

2/ 4           1                             0    1                                                  7    4              0
               N                             N  WNW                                                 NW   NW            ENE
2/ 5                                                   2                                             5    1
                                                     ESE                                           SSW  SSW
2/ 6      0                        1              0
        WNW                        N              E
2/ 7                                         1                                                        2
                                           NNE                                                      ESE
2/ 8                                                                                                 9
                                                                                                   SSW
2/ 9                                              0                                                  8    5    0    1
                                                  N                                                 NW    N    E  WSW
2/10                                              0                                                            0    1
                                                 NW                                                          NNE  WSW
2/11                                                                                                                1    1
                                                                                                                  NNW   SE
2/12                                                   3                                                  7
                                                     ESE                                                  S
2/13                                                        2                                             4    2    5    2    4    5
                                                            E                                           WNW    W  NNW    E  NNW  NNE
2/14           6         4    5    2    1    2                                                            5         5
               N       WNW    W  WNW  SSE   SE                                                            E         E
2/15                     0                                                                                               1
                         S                                                                                               S
2/16                                                                                                          14   11
                                                                                                             SSW  SSW
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              C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
            STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                       PERIOD( 2/ 1/77 TO  2/28/77)

                         HOURLY WIND AND DIRECTION
                             E STABILITY CLASS

2/17     11
        SSW
2/18      3                                                                                         6
          W                                                                                        NE
2/19                                                                                                4
                                                                                                  WNW
2/20                                                                                               12
                                                                                                  SSW
2/21                              10
                                 SSW
2/22                                         5                                                                9
                                           WNW                                                              [illegible]
2/23           7    4    3                                                                               7         7    4   10
             WNW  WNW    N                                                                             WSW        SW  SSW   SW
2/24          10   10   10                                                                               2    2    2    3
              SW  WSW  WSW                                                                               W  NNW    N  NNW
2/25                                                                                                9    3
                                                                                                    N   NE
2/26                                              3                                                                4    5    5
                                                  S                                                              WNW  WNW  WNW
2/27      5    6         4    5    5    5    2                                                      2    6    5    7         10
        WNW  WNW        NW    W  WNW  WNW  WNW                                                      W  SSW  SSW  SSE       SSW
2/28      9    9                       10         2                                                 9         7    5         3
          S    S                      SSW       SSE                                                 S         S   SE         E
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                C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
          STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                      PERIOD( 2/ 1/77 TO  2/28/77)

                        HOURLY WIND AND DIRECTION
                            F STABILITY CLASS

                                      HOUR
        1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24


2/ 1    3   3   3   3   4   3   3   2   3
      ESE  SE  SE SSE SSE ESE  SE  SW   W
2/ 2                                                                                       3   5   4
                                                                                         WNW   W   W
2/ 3    2   2   0   0   1   0   0   1   0                                       4   7   2   1   2   1
      WSW WSW ESE   E  SW   W   E   S  SE                                     WSW SSW   S WNW ESE WSW
2/ 4    1       2   0   1   2   2                                                   3   3       0   1
      WSW     WNW   E NNW  NW  SW                                                 WSW  SW      NE  SW
2/ 5    1   0   1   0   2   4   1   2   3                                           2   2   1   1   1
      SSW ESE   S ENE ESE SSE SSW  SE ESE                                           S   S  SW  NE NNW
2/ 6        1   0   0   0       1   0                                           2   1   2   1   0   0
          SSW NNW WNW ENE     SSW ENE                                         NNW WNW   W   W   N ESE
2/ 7    0   0   1   2   0   0   1       1                                           1   2   2   1   0
       SE NNW  NW WSW   E  NE   W      NE                                           S  NE SSE WNW  SE
2/ 8    1   2   4   4   2   5   6   5   4                                       7   3   3   5   5   4
      WNW  NE  SE SSE  SE SSE  SE  SE  SE                                       S ESE SSE  SE  SE  SE
2/ 9    5   3   5   2   1   2   3   1                                                      2   2   2
       SE  SE  SE   S  NE SSE WSW   N                                                    WNW WSW WSW
2/10    1   1   1   2   2   2   2   1                                           6           1   2   1
      SSW WNW   W WSW WSW WSW  SW  SW                                         NNW         WSW WSW  SW
2/11    1   1   3   1   1   2   2   2   2                                           3           1   2
      ENE  NE  NW  SW NNE   S  NW   S SSE                                          NW         SSW  SW
2/12    1   1   1   3   1   1   3   1   1                                           2   3   2   3   4
       SE WSW   S   S  SE NNW  SE   W  NE                                         ESE  SE  SE  SE  SE
2/13    4   3   3   2   3   4   6   5   5   2
      ESE  SE ESE SSW   S ESE  SE ESE SSE   S
2/14    8       7                                                                   6       2   0   2
        N      NW                                                                 ESE      SE   N SSW
2/15    1   1   1       1   3   4   6   7                                       5   7   4       1   2
      SSW   W  SE      SE   S   S   S SSE                                      SW SSW  SW       S  SW
2/16    1   1   1   2   2   0   1   1   1   1                                               3   5   7
      SSW SSW ESE ENE SSE   W WSW ESE   S   E                                             SSW SSW   S
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                    C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
               STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 1)
                         PERIOD( 2/ 1/77 TO  2/28/77)

                             HOURLY WIND AND DIRECTION
                                F STABILITY CLASS

2/17         8   7   2   4   2   1   1   2                                       7   7   2   2   5   6
           SSW SSW SSW SSW WSW SSE  SE SSE                                      SW  SW  SW  SW WSW  SW
2/18         3   4   4   3   2   1   2   1                                           5   4   1   2   0
             W  SE  SE SSE SSW SSE SSW   S                                          SE SSE  SW WSW SSE
2/19     2   2   1   0   3   1   1   1   1                                           5   7   1   1   0
        SE  SE  NE NNE  SW  SE   S  SE   E                                          SW SSW  SW  SE  NE
2/20     1   0   1   0   1   1   1   1   2                                           8   5   4   2   3
       SSE  NE SSW   E   S   W   W   S   E                                         SSW SSW   S   S  SE
2/21     2   4   4   9   6       7   3   2
       SSE   S SSW SSW   S       S  SE ESE
2/22

2/23                     5   5   2   1
                         W WSW WSW SSW
2/24

2/25                                                                                     0   1   2   1
                                                                                        SE   W   W WSW
2/26     2   1   2   1   0   2   3   3
       WSW ESE   W  SE   E   E SSE   S
2/27             3                                                                               8
               NNW                                                                             SSW
2/28             4   5   8   9       8                                                           5
                 S   S   S   S     SSW                                                         ESE
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(2/ 1/77 TO 2/28/77)

	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1	E	E	F	F	E	E	E	D	E	D	A	B	A	A	A	B	B	B	B	A	A	B	D	C
2/ 2	A	B	B	B	B	B	A	A	A	B	A	A	A	B	B	B	B	B	C	C	D	E	E	E
2/ 3	E	D	E	F	E	F	E	F	F	A	A	A	B	A	B	B	B	A	E	F	F	F	F	E
2/ 4	E	E	F	E	E	E	E	D	C	A	B	A	B	B	B	B	B	B	D	E	F	D	E	E
2/ 5	F	E	F	F	E	E	E	E	E	D	B	B	B	B	B	A	B	D	C	E	E	E	F	F
2/ 6	D	E	E	E	E	E	E	E	E	C	B	B	B	B	B	B	B	A	E	E	E	F	D	F
2/ 7	F	F	F	E	F	F	F	F	F	D	A	A	A	B	B	B	B	A	D	E	F	E	E	E
2/ 8	E	F	F	F	F	F	F	F	E	A	A	A	A	A	A	B	B	D	F	F	F	F	F	F
2/ 9	F	F	F	F	F	F	F	F	E	A	A	B	B	B	B	B	B	C	D	D	D	E	E	E
2/10	F	E	D	E	E	E	E	E	C	A	A	B	B	B	B	B	B	B	E	D	D	D	F	F
2/11	F	F	F	F	E	E	F	E	E	C	A	B	B	C	C	C	B	B	A	E	D	D	D	F
2/12	F	F	D	E	F	F	E	F	F	F	A	B	A	B	A	A	B	B	D	E	F	E	E	F
2/13	E	E	F	F	F	F	F	F	F	F	C	A	A	B	B	B	B	B	D	D	D	D	D	D
2/14	E	D	D	D	D	C	A	C	A	A	A	B	C	D	B	B	B	B	D	D	D	E	E	E
2/15	E	F	F	E	E	F	F	F	E	B	A	A	B	B	B	B	B	B	E	E	E	F	D	F
2/16	F	F	F	F	E	F	F	F	F	E	A	A	A	A	B	C	C	C	D	D	E	E	E	E
2/17	E	E	F	E	F	F	E	E	E	D	A	B	B	B	B	C	B	C	F	F	D	F	E	F
2/18	F	E	E	E	F	F	E	F	F	C	A	B	A	B	B	B	B	B	B	D	E	F	E	E
2/19	E	F	F	E	F	E	F	F	F	A	A	B	B	B	B	B	B	B	D	E	F	E	F	E
2/20	E	F	F	F	F	F	F	F	F	A	A	B	A	B	B	B	B	C	E	F	E	F	E	F
2/21	E	E	E	F	E	E	E	F	F	A	B	D	C	C	C	D	D	B	C	D	D	D	B	B
2/22	D	D	B	B	B	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B
2/23	B	B	B	D	E	E	E	D	A	A	A	A	B	B	C	C	C	B	B	B	B	B	D	D
2/24	C	B	B	B	C	B	C	B	B	D	C	B	B	C	C	C	C	B	A	C	D	C	C	A
2/25	A	B	B	B	B	B	B	B	B	B	B	B	C	D	D	D	D	B	C	D	D	D	F	E
2/26	E	F	E	F	E	E	F	F	C	B	B	B	B	B	B	A	A	A	B	B	B	A	C	D
2/27	C	D	D	D	C	A	A	C	A	A	A	A	B	A	A	B	B	B	B	D	E	D	E	E
2/28	D	D	E	E	E	F	E	F	A	B	B	B	B	B	B	B	B	B	C	D	D	D	E	D

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(2/ 1/77 TO 2/28/77)

HOURLY WIND AND DIRECTION
A STABILITY CLASS

	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1											1 NNE		2 SSW	2 ENE	3 NE					4 NW	1 NNW			
2/ 2	4 WNW						5 NW	3 NW	5 NW		4 NW	3 WNW	2 WNW											
2/ 3										2 ESE	2 NNE	2 NNE		4 N				3 NNW						
2/ 4										2 W		3 NW												
2/ 5																3 SW								
2/ 6																		5 NW						
2/ 7											2 NE	3 NNW	3 NW					3 NNW						
2/ 8										2 E	2 NNE	2 NNE	3 WSW	3 SW	4 SW									
2/ 9										0 N	2 NW													
2/10										3 W	2 WNW													
2/11											1 NNE								3 NNE					
2/12											3 E		4 SW		3 SW	3 SW								
2/13												3 NNW	2 WNW											
2/14							1 E		2 S	2 W	2 NW													
2/15											2 ESE	4 NNW												
2/16											2 E	2 NNW	2 WNW	2 SSW										

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        C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
   STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
               PERIOD( 2/ 1/77 TO  2/28/77)

                  HOURLY WIND AND DIRECTION
                     A STABILITY CLASS

2/17                                            4
                                              WNW
2/18                                            5       4
                                              ENE     ENE
2/19                                        3   4
                                          ESE NNE
2/20                                        1   3       5
                                          ENE NNW     WSW
2/21                                        3
                                           SW
2/22                        4   5   7           3
                          NNW  NW  NW           N
2/23                                    2   2   4   3
                                       SW  NW WNW WNW
2/24                                                                                3                   5
                                                                              NNW                  NW
2/25    4
      WNW
2/26                                                                    5   2   3               7
                                                                    W  SW  SE              NW
2/27                        8   7       1   2   3   2       4   4
                          WNW WNW       N   N NNW NNW     WNW  NW
2/28                                    3
                                      SSW
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(2/ 1/77 TO 2/28/77)

HOURLY WIND AND DIRECTION
B STABILITY CLASS

HOUR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1												4 WNW				5 NW	7 NW	8 WNW	7 WNW			2 [illegible]		
2/ 2		6 NW	7 NW	7 NW	5 WNW	7 WNW				5 NW				5 WNW	7 NW	6 N	7 N	8 N						
2/ 3													4 NNE		5 NW	7 NNW	5 NNW							
2/ 4											3 WNW		6 NW	7 NW	8 NW	9 NW	7 NW	8 NNW						
2/ 5											4 SW	7 SW	8 SSW	8 SSW	5 SW		5 SSW							
2/ 6											4 NW	4 NW	6 WNW	6 WNW	6 NW	6 NW	6 NW							
2/ 7														6 NNW	7 NNW	6 NNW	4 N							
2/ 8																5 SW	6 SW							
2/ 9												4 WNW	6 WNW	7 NW	8 NW	8 NW	7 NNW							
2/10												5 NW	7 NW	8 NW	9 N	7 N	5 NNW	8 NW						
2/11												8 NNW	11 NNW				10 NNE	7 NE						
2/12												5 SSW		5 WSW			6 W	10 SSW						
2/13														6 NW	8 NNW	7 NNW	10 NW	8 NW						
2/14												7 NW			11 NNE	10 NNE	11 NE	5 NE						
2/15										5 SSE			7 NNW	6 NNW	8 NW	8 NW	9 NNW	7 NNW						
2/16															9 SW									

CORPORATION

```
                 C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
             STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                          PERIOD( 2/ 1/77 TO  2/28/77)

                            HOURLY WIND AND DIRECTION
                               B STABILITY CLASS

2/17                                                            7    9    9   10         10
                                                              WNW  WNW  WNW  WNW        WNW
2/18                                                            6         7   10    8   11   10    6
                                                               NE         N   NW  NNW   NW   NW   NE
2/19                                                            7    6    5    7   10    9    8
                                                              NNW   NW   NW   NW   NW  NNW   NW
2/20                                                            5         5    6    8   11
                                                               SW       WSW  WNW   SW   SW
2/21                                                      10                                 12                     14   10
                                                          SW                                  S                     SW   SW
2/22             12   11    8                   7    6         5    6    5   11   12   13    8    8   10   11   11   12    9
                  W  WNW  WNW                   N   NE         N    W  NNW   NW  WNW  WNW  WNW  WNW  NNW    W    W    W    W
2/23      9    9    6                                               5    9                   12   10    9   13    9
          W    W  WNW                                               W   SW                   SW   SW  WSW  WSW   SW
2/24           13   13   12        11        11   10              9   10                     8
               SW  WSW  WSW         W         W    W            WNW    W                     N
2/25            7    6    7    9    9    9    9    9   10   11   10                         11
               NW   NW   NW   NW  NNW  NNW  NNW   NW  NNW  NNW    N                          N
2/26                                                 8   11   11   11    9    6                   6    8   11
                                                   SSW   SW   SW  SSW  WSW  WNW                   W    W  WNW
2/27                                                                5              7    9    6    3
                                                                   NW             NW  WNW   NW  WNW
2/28                                                 5    6    9    8    7   10   11   10   10
                                                   SSW   SW   SW   SW   SE  SSW  SSW  SSW    S
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(2/ 1/77 TO 2/28/77)

HOURLY WIND AND DIRECTION
C STABILITY CLASS

	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1																								1 WNW
2/ 2																			11 NNE	8 N				
2/ 3																								
2/ 4									1 W															
2/ 5																			2 S					
2/ 6										1 WNW														
2/ 7																								
2/ 8																								
2/ 9																		8 NW						
2/10									1 W															
2/11										2 SSW				15 NNE	13 N	12 N								
2/12																								
2/13											2 SSE													
2/14						3 WNW		2 SE					12 NNW											
2/15																								
2/16																15 SW	13 SSW	16 SW						

```
          C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
        STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                  PERIOD( 2/ 1/77 TO  2/28/77)

                   HOURLY WIND AND DIRECTION
                       C STABILITY CLASS

2/17                                                              11         7
                                                                 WNW         W
2/18                                       2
                                         ESE
2/19
2/20                                                                        14
                                                                            SW
2/21                                                      13  14  15              12
                                                         SSW SSW  SW               S
2/22
2/23                                                              13  13  12
                                                                  SW  SW  SW
2/24    16              13      16              11          12  12  11  12           2       2   4
        SW               W       W             WNW         WNW   W  NW   N          NW       N  NW
2/25                                                  14                  10
                                                       N                   N
2/26                                   5                                                         7
                                       S                                                       WNW
2/27     6               6           4
       WNW             WNW          NW
2/28                                                                          12
                                                                               S
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(2/ 1/77 TO 2/28/77)

HOURLY WIND AND DIRECTION
D STABILITY CLASS

	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1								2 WSW		3 NE													1 NE	
2/ 2																					4 N			
2/ 3		2 N																						
2/ 4								1 WNW											5 NNW			1 SSE		
2/ 5										1 ESE								7 SW						
2/ 6	0 NW																						1 WSW	
2/ 7										0 E									2 E					
2/ 8																		10 SSW						
2/ 9																			7 NNW	2 N	1 NW			
2/10			1 WNW																	1 N	0 NE	0 NE		
2/11																					2 WNW	0 WSW	0 WSW	
2/12			2 SW																9 SSW					
2/13																			4 NNW	5 WNW	4 NNW	4 N	6 N	7 N
2/14		7 N	8 NNE	6 NW	6 WNW									14 N					5 E	8 E	6 ESE			
2/15																							1 SSW	
2/16																			18 SSW	18 SSW				

```
                C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
            STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                    PERIOD( 2/ 1/77 TO  2/28/77)

                       HOURLY WIND AND DIRECTION
                          D STABILITY CLASS

2/17                                                     2                                                      1
                                                       SSW                                                     SW
2/18                                                                                                       6
                                                                                                          SE
2/19                                                                                                  6
                                                                                                     NW
2/20
2/21                                                              15                  16   18             28   29   24
                                                                  SW                 SSW  SSW            SSW  SSW  SSW
2/22       22   18
           SW  WSW
2/23                       5                   2                                                                          8   14
                         WNW                 WSW                                                                         SW   SW
2/24                                                    15                                                      3
                                                         W                                                      N
2/25                                                                        16   16   18   14              5    1    2
                                                                             N    N    N    N            NNE   NE   NW
2/26                                                                                                                           7
                                                                                                                               W
2/27             8    6    7                                                                               7        10
               WNW  NNW  NNW                                                                             SSW       SSW
2/28       10   10                                                                                        14    9    6         3
          SSW  SSW                                                                                       SSW    S   SE       ESE
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(2/ 1/77 TO 2/28/77)

HOURLY WIND AND DIRECTION
E STABILITY CLASS

HOUR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1	4 SSE	4 S	3 SSE	3 S	6 S	2 SE	2 SE		4 WNW															
2/ 2																						3 NW	5 WNW	4 WNW
2/ 3	3 W		1 SW	1 SE	1 SSW		0 E												3 WNW				2 ESE	1 SW
2/ 4	0 SSW	2 N	2 WNW	0 NE	1 E	2 NW	2 W													3 W	2 W		1 ESE	1 S
2/ 5		1 SE		0 WSW	0 ESE	4 SSE	2 WSW	1 SSE	2 SE											2 S	2 SSE	1 W	1 WSW	1 N
2/ 6		0 N	0 NNW	0 W	1 W	2 W	2 WSW	1 SW	1 SSW										3 NNW	2 N	2 NNW	2 WNW		1 SW
2/ 7				1 W																1 SSE		2 SW	0 W	1 SSW
2/ 8	1 WNW	2 NNE							2 SE										8 SSW	1 NE				
2/ 9									0 NNW													3 NE	1 WNW	1 W
2/10	1 WSW	1 WNW		2 W	2 W	2 W	3 WSW	3 WSW											8 NNW				2 WNW	1 WSW
2/11				0 WNW	1 NE	1 WSW		2 SSE	3 SE											3 NW				2 WSW
2/12	0 SSE			3 SSW			3 ESE			2 SE										3 SW	3 S	2 S	3 S	
2/13	3 SW	3 SE					5 SE																	
2/14	10 N																					3 E	1 E	2 S
2/15	1 SSW			0 WSW	2 SSE				9 SSE										5 SW	9 SW	6 WSW	2 WSW		0 WSW
2/16					1 SSE					2 SE											17 SSW	11 SSW	10 SW	11 SSW

CORPORATION

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                         C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
                    STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                                PERIOD( 2/ 1/77 TO  2/28/77)

                                 HOURLY WIND AND DIRECTION
                                    E STABILITY CLASS

2/17     16   13         7              3    3    4                                                                4    7
        SSW  SSW       SSW            SSW  SSW  SSW                                                              WSW    W
2/18      5    4    4    6              3         3                                                           4         0    0
          W    W   SE  ESE            SSW       SSW                                                          SE       WNW   SE
2/19      2    2    1    1         1                                                                     4         3    1    0
        ESE    E  NNE    N       SSW                                                                   WSW        SE    S  ENE
2/20      3         2                                                                               17         9    8    4
        SSW       SSW                                                                              SSW       SSW  SSW  SSW
2/21      3    7    7   12    8   14    8    3    2
        SSW  SSW  SSW  SSW  SSW  SSW    S    S    S
2/22

2/23                          5    5    3
                            WNW    W  WSW
2/24

2/25                                                                                                                    3    2
                                                                                                                      WNW  WNW
2/26      2    0    2    1    0    1    3
          W    W  WNW   SW    E    E  SSE
2/27                                                                                                          8        13   14
                                                                                                             SW       SSW  SSW
2/28                8    6   10        15                                                                               6
                  SSW  SSW    S       SSW                                                                              SE
```

C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
PERIOD(2/ 1/77 TO 2/28/77)

HOURLY WIND AND DIRECTION
F STABILITY CLASS

	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/ 1																								
2/ 2																								
2/ 3						0 NW		0 ESE	0 ESE											6 SSW	3 S	2 SW		
2/ 4																								
2/ 5	1 S		2 SW																					
2/ 6																								
2/ 7	1 SW	0 NNW	1 N		0 SW	0 SSE	0 N	2 N	2 N												1 SE			
2/ 8			3 SE	3 SE	2 ESE	3 SSE	5 SE	3 SSE													1 SSE	3 SSE	4 SE	3 SE
2/ 9	2 SSE	2 SE	3 SE	1 S	1 ESE	2 SE	1 NW	2 N																
2/10																								
2/11	0 SW	0 E	2 NNW				1 W																	
2/12		1 W			1 S	1 WNW		1 SW	1 WSW															3 SSE
2/13			2 NNW	1 SW	3 S	4 S		5 S	5 S	4 SSW														
2/14																								
2/15		0 NW	0 WSW			3 SSE	7 S	9 S																
2/16	1 WSW	2 SSW	2 SSW	1 NE		0 WNW	1 NNW	2 SSE	3 SSE															

```
                  C-B SHALE OIL PROJECT METEOROLOGICAL TOWER SITE
             STABILITY CLASS DETERMINATION USING DT/DZ (LEVEL 2)
                          PERIOD( 2/ 1/77 TO  2/28/77)

                            HOURLY WIND AND DIRECTION
                              F STABILITY CLASS

2/17                11      10   5                                                   9   9               9
                   SSW     SSW SSW                                                 WSW WSW              SW
2/18                         3   4       2                                                       1
                            SE SSW      SW                                                       E
2/19                         2       1   1   2                                               8
                           WSW      SW  SE  SE                                              SW
2/20             0       1   1   1   1   1   2                                          13               3
                 S       S WSW   W  NW NNE   E                                         SSW               S
2/21

2/22

2/23

2/24

2/25

2/26                                     4
                                         S
2/27

2/28                            12      12
                                 S     SSW
```

APPENDIX A

STABILITY WIND ROSE DIAGRAMS

APPENDIX A

STABILITY WIND ROSE DIAGRAMS

According to the data presented in AEC Safety Guide No. 23, the relationships between stability classes and σ_Θ are as follows (the values shown are averages for each stability classification...σ_Θ is the standard deviation of horizontal wind direction fluctuations).

Stability Classification	Pasquill Categories	Average Values σ_Θ (degrees)
Extremely Unstable	A	25.0°
Moderately Unstable	B	20.0°
Slightly Unstable	C	15.0°
Neutral	D	10.0°
Slightly Stable	E	5.0°
Moderately Stable	F	2.5°

Stability wind roses obtained at the trailers in the monitoring network are displayed in the following tables. Because of the relatively low heights above the surface (9 meters) at which the wind data is taken, the stability distributions are skewed toward the unstable end of the spectrum. That is, the unstable classes (A, B, and C) have a much higher frequency of occurrence than would be obtained with the Pasquill method of stability categorization (or with instruments at higher levels).

Table 1 depicts the frequency distribution of Pasquill stability categories based on σ_Θ from data collected by M. M. Pendergast and T. V. Crawford at the Savannah River Plant ("Actual Standard Deviations of Vertical and Horizontal Wind Direction Compared to Estimates from Other Measurements", Symposium on Atmospheric Diffusion and Air Pollution, September 9-13, 1974). Three distinct range patterns of stability class

distributions were observed: low, mid, and high, according to the height at which the σ_θ measurements were taken.

TABLE 1

FREQUENCY DISTRIBUTION OF PASQUILL STABILITY CATEGORIES

	Stability Categories based on σ_θ							
Height, m	A $\sigma_\theta > 22$	B $18 \leq \sigma_\theta < 22$	C $13 \leq \sigma_\theta < 18$	D $8 \leq \sigma_\theta < 13$	E $4 \leq \sigma_\theta < 8$	F $2 \leq \sigma_\theta < 4$	G $\sigma_\theta < 2$	
10	22.6	13.9	21.8	28.9	8.9	0.4	3.5	LOW RANGE
35	19.3	11.8	19.4	32.4	15.9	0.7	0.5	
91	9.6	6.7	13.5	21.7	29.5	16.4	2.5	MID RANGE
137	9.3	5.8	11.7	20.8	28.5	18.4	5.5	
182	7.0	2.9	6.8	17.1	25.9	25.5	14.7	HIGH RANGE
243	7.7	4.3	9.4	17.7	27.6	22.9	10.4	
304	7.2	3.7	8.0	17.2	23.7	23.9	11.3	

Also, Figure 1 (from D. H. Slade, Meteorology and Atomic Energy, 1968, p. 52) demonstrates that the line representing very stable conditions (which by their nature are associated with light winds) branches into three separate lines near the ground. The curve at the left represents the smallest values of σ_θ usually observed. The curve that branches off to the right reflects the contribution of very low-level wind direction meander to the total standard deviation. These meandering oscillations decrease in amplitude very rapidly with height under stable conditions. The central curve represents typical inversion conditions. Actually, for a given stability condition, values of σ_θ will always be greater when the wind is light than when it is strong. This phenomena is most noticeable in the lowest layers.

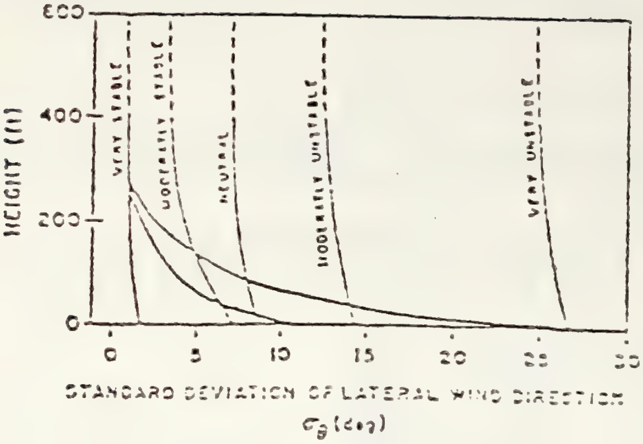

FIGURE 1

The vertical variation of the lateral wind-direction standard deviation (σ_θ) for various stability regimes. The curves represent average or typical conditions with the exception of the two outer "very stable" lines, which represent extremes.

The large surface values of σ_θ for unstable conditions do not decrease very rapidly with height. As in the case of very stable conditions, the greatest lateral fluctuations during a very unstable thermal structure occur with very light winds. As a general rule, for a given insolation condition, increasing wind speeds are associated with profiles of σ_θ that tend toward neutral stability.

The majority of the trailers in the network recorded very light winds throughout the month. Therefore, the stability distributions had a predominance of high σ_θ values and, hence, unstable classifications. Those trailers with the highest average winds (and fewest nearby obstacles to the flow) generally had the more reasonable and representative low-level stability class distributions.

```
                                        STABILITY WIND ROSE DIAGRAM

                                           C-b SHALE OIL PROJECT
                              LEVEL =  8 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

STABILITY CLASS - A
                                                          WIND DIRECTION
                         N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW   TOTAL   %
GROUP MAX SPEED          8.   4.   3.   5.    2.   0.    1.   3.    1.   2.    2.   5.    6.   4.    4.   8.
  MPH

   GT   24      :                                                                                          :         0.

   18 -  24     :                                                                                          :         0.

   12 -  18     :                                                                                          :         0.

    7 -  12     :    2                                                                                   1 :       3  2.

    3 -   7     :   17    8    1    1          1          1                      2   10    1     2    9 :      53 44.

   LT   3       :    6    6   11    8    6     1    2     0    1     2     2     2    7    5     0    5 :      64 53.

     TOTAL      :   25   14   12    9    6     2    2     1    1     2     2     4   17    6     2   15 :     120

    PERCENT     :  21.  12.  10.   7.   5.    2.   2.    1.   1.    2.    2.    3.  14.   5.    2.  12. :       100.
                ...........................................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          24(  20.00 %)
```

CORPORATION

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                                        STABILITY WIND ROSE DIAGRAM

                                          C-B SHALE OIL PROJECT
                                 LEVEL =  6 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

  STABILITY CLASS - F
                                                           WIND DIRECTION
                          N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED          3.   3.   4.   2.   3.   3.   2.   0.   1.   0.   3.   3.   3.   7.   0.   1.
     MPH


    GT   24     :                                                                                  :       0.

   18 -  24     :                                                                                  :       0.

   12 -  18     :                                                                                  :       0.

    7 -  12     :                                                                    1             :     1  2.

    3 -   7     :    1    1    1         1    2                        1    1    1    8    4        :    21 40.

    LT    3     :    0    3    1    2    7    1    2         1         2    0    3    6    2    1   :    31 58.

     TOTAL      :    1    4    2    2    8    3    2    0    1    0    3    1    4   15    6    1   ;    53

   PERCENT      :   2.   8.   4.   4.  15.   6.   4.   0.   2.   0.   6.   2.   8.  28.  11.   2.  :      100.
                ..............................................................................................

                        TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          11(  20.75 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                           C-B SHALE OIL PROJECT
                               LEVEL =  6 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - C

                                                              WIND DIRECTION
                         N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED         7.   5.   3.   3.   2.   5.   2.   4.   1.   1.   5.   6.   5.   7.   7.   3.
    MPH


   GT    24    :
                                                                                                     :        0.
  18 -   24    :
                                                                                                     :        0.
  12 -   18    :
                                                                                                     :        0.
   7 -   12    :   2
                                                                                    4    1           :    7  3.
   3 -    7    :   4    2    1    1         5         1              4    3   11   45   20    1 :   98 49.
   LT     3    :   3    1    2    4   14   13    7    1    1    1   10    4   15   14    6    1 :   97 48.
     TOTAL     :   9    3    3    5   14   18    7    2    1    1   14    7   26   63   27    2 :  202
    PERCENT    :  4.   1.   1.   2.   7.   9.   3.   1.   0.   0.   7.   3.  13.  31.  13.   1. :      100.
              ......................................................................................

                        TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       25(  12.38 %)
```

STABILITY WIND ROSE DIAGRAM

C-B SHALE OIL PROJECT
LEVEL = 8 FEET PERIOD(2/ 1/77 TO 2/28/77)

STABILITY CLASS - D

WIND DIRECTION

GROUP MAX SPEED MPH		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		TOTAL	%
		7.	3.	1.	3.	3.	4.	3.	3.	1.	3.	5.	5.	6.	8.	7.	3.			
GT 24	:																	:		0.
18 - 24	:																	:		0.
12 - 18	:																	:		0.
7 - 12	:	2													1	1		:	4	1.
3 - 7	:	8	2		2	2	10	5	1		2	28	5	15	47	9	1	:	137	50.
LT 3	:	3	1	1	7	11	14	10	2	1	16	29	2	11	19	2	2	:	131	48.
TOTAL	:	13	3	1	9	13	24	15	3	1	18	57	7	26	67	12	3	:	272	
PERCENT	:	5.	1.	0.	3.	5.	9.	6.	1.	0.	7.	21.	3.	10.	25.	4.	1.	:		100.

TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE - 32(11.76 %)

```
                                          STABILITY WIND ROSE DIAGRAM

                                             C-B SHALE OIL PROJECT
                                  LEVEL =  8 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - F
                                                            WIND DIRECTION
                         N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED         0.    0.    2.    2.    2.    3.    3.    0.    0.    0.    8.    4.    4.    2.    0.    0.
     MPH


    GT   24    :                                                                                                  :        0.

  18 -   24    :                                                                                                  :        0.

  12 -   18    :                                                                                                  :        0.

   7 -   12    :                                                                                                  :        0.

   3 -    7    :                                     1     1                             5     1     1            :      9 31.

    LT    3    :                 1     1     1       2     1                            10     0     3     1      :     20 69.

     TOTAL     :         0     0     1     1     1     3     2     0     0     0    15     1     4     1     0     0 :     29

    PERCENT    :        0.    0.    3.    3.    3.   10.    7.    0.    0.    0.   52.    3.   14.    3.    0.    0. :      100.
                    ..........................................................................................................

                              TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          5(  17.24 %)
```

STABILITY WIND ROSE DIAGRAM

C-B SHALE OIL PROJECT
LEVEL = 8 FEET PERIOD(2/ 1/77 TO 2/28/77)

STABILITY CLASS - TOTAL

GROUP MAX SPEED MPH		WIND DIRECTION N 8.	NNE 5.	NE 4.	ENE 3.	E 3.	ESE 5.	SE 3.	SSE 4.	S 1.	SSW 3.	SW 5.	WSW 5.	W 6.	WNW 8.	NW 7.	NNW 8.		TOTAL	%
GT 24	:																	:		0.
18 - 24	:																	:		0.
12 - 18	:																	:		0.
7 - 12	:	6													6	2	1	:	15	2.
3 - 7	:	30	13	3	4	3	19	6	3		2	38	12	38	101	35	11	:	318	45.
LT 3	:	13	12	16	23	41	34	25	3	4	20	57	11	41	48	11	9	:	368	52.
TOTAL	:	49	25	19	27	44	53	31	6	4	22	95	23	79	155	48	21	:	701	
PERCENT	:	7.	4.	3.	4.	6.	8.	4.	1.	1.	3.	14.	3.	11.	22.	7.	3.	:		100.

TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE = 97(13.84 %)

PERCENTAGE OF A STABILITY = 17.12 %
PERCENTAGE OF B STABILITY = 7.56 %
PERCENTAGE OF C STABILITY = 28.62 %
PERCENTAGE OF D STABILITY = 38.86 %
PERCENTAGE OF E STABILITY = 4.14 %

```
                                        STABILITY WIND ROSE DIAGRAM

                                          C-B SHALE OIL PROJECT
                              LEVEL = 30 FEET   PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - A
                                                                  WIND DIRECTION
                       N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
GROUP MAX SPEED      10.    6.    3.    4.    2.    2.    3.    0.    0.    0.    3.    4.    7.    6.    7.    7.
      MPH


      GT   24    :                                                                                                  :       0.

     18 -  24    :                                                                                                  :       0.

     12 -  18    :                                                                                                  :       0.

      7 -  12    :     8                                                                 2                 1     1  :    12 16.

      3 -   7    :     9     7     2     3                 1                       1     2     4     4     3     4  :    40 52.

      LT    3    :     1     5     3     4     3     2     0                       0     4     0     1     1     1  :    25 32.

       TOTAL     :    18    12     5     7     3     2     1     0     0     0     1     6     6     5     5     6  :   77

      PERCENT    :   23.   16.    6.    9.    4.    3.    1.    0.    0.    0.    1.    8.    8.    6.    6.    8.  :      100.
                 ...............................................................................................................

                               TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -           1(    1.30 %)
```

CORPORATION

```
                              STABILITY WIND ROSE DIAGRAM

                                  C-B SHALE OIL PROJECT
                       LEVEL = 30 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - B
                                                  WIND DIRECTION
                     N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED     6.   4.   1.   5.   5.   2.   2.   9.   1.   0.   1.   4.   4.   6.   6.   0.
    MPH

    GT   24    :                                                                                :       0.

   18 -  24    :                                                                                :       0.

   12 -  18    :                                                                                :       0.

    7 -  12    :     1                                                                          :     1  3.

    3 -   7    :     3    3         1    2                                 1    3    2    3       :    18 56.

    LT    3    :     0    3    1    1    1    2    1         1         1    2    0    0    0       :    13 41.

     TOTAL     :     4    6    1    2    3    2    1    0    1    0    1    3    3    2    3    0 :   32

   PERCENT     :   12.  19.   3.   6.   9.   6.   3.   0.   3.   0.   3.   9.   9.   6.   9.   0. :      100.
                 ......................................................................................

                      TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          1(   3.12 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                       C-B SHALE OIL PROJECT
                             LEVEL = 30 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

  STABILITY CLASS - C
                                                                     WIND DIRECTION
                          N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
 GROUP MAX SPEED          7.   3.   4.   4.   3.   4.   4.   2.   2.   0.   4.   5.   7.   9.   8.   8.
       MPH

     GT    24     :                                                                                  :        0.

    18 -   24     :                                                                                  :        0.

    12 -   18     :                                                                                  :        0.

     7 -   12     :    1                                                         1    2    4    1 :      9  9.

     3 -    7     :    2    2    2    1    2    3    3                   3    6    5   24   15    2 :     70 68.

    LT      3     :    0    1    0    2    3    5    3    2    1         1    2    1    3    0    0 :     24 23.

      TOTAL       :    3    3    2    3    5    8    6    2    1    0    4    8    7   29   19    3 :   103

     PERCENT      :   3.   3.   2.   3.   5.   8.   6.   2.   1.   0.   4.   8.   7.  28.  18.   3. :      100.
                  ...........................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          2(   1.94 %)
```

CORPORATION

```
                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                           LEVEL = 30 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - D
                                                               WIND DIRECTION
                          N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW   TOTAL  %
GROUP MAX SPEED         10.   1.   1.   4.   4.   5.   5.   4.   0.   5.   7.   7.   8.  11.   9.  10.
     MPH


    GT   24    :                                                                                   :         0.

   18 -  24    :                                                                                   :         0.

   12 -  18    :                                                                                   :         0.

    7 -  12    :   2                                                 3    2    5   15    6    4 :   37 12.

    3 -   7    :   6              3   12   17   13    3         15   27   12   27   73   11    7 :  226 75.

    LT    3    :   1    2    1    3    4    4    4    0          4    5    3    4    1    1    0 :   37 12.

     TOTAL     :   9    2    1    6   16   21   17    3    0   19   35   17   36   89   18   11 ;  300

    PERCENT    :  3.   1.   0.   2.   5.   7.   6.   1.   0.   6.  12.   6.  12.  30.   6.   4. :       100.
                 ...................................................................................................

                        TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          1(   0.33 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                          C-B SHALE OIL PROJECT
                              LEVEL = 30 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - F
                                                                 WIND DIRECTION
                         N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW   TOTAL   %
GROUP MAX SPEED         11.   8.    3.    0.    4.    5.    5.    5.    2.    6.    7.    6.    7.    7.    6.    0.
    MPH


     GT    24     :                                                                                                   :          0.

   18 -    24     :                                                                                                   :          0.

   12 -    18     :                                                                                                   :          0.

    7 -    12     :      1     1                                                     2           2     2              :       8  8.

    3 -     7     :      4     0     1           4     7     8     2           5    10     3     7    19     1        :      71 73.

     LT     3     :      0     0     3           0     2     1     2     3     0     3     0     4     0     0        :      18 19.

      TOTAL       :      5     1     4     0     4     9     9     4     3     5    15     3    13    21     1     0  :    97

     PERCENT      :     5.    1.    4.    0.    4.    9.    9.    4.    3.    5.   15.    3.   13.   22.    1.    0. :       100.
                      ..............................................................................................................

                              TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          0(   0.00 %)
```

CORPORATION

```
                              STABILITY WIND ROSE DIAGRAM

                                  C-B SHALE OIL PROJECT
                      LEVEL = 30 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

STABILITY CLASS - TOTAL
                                                     WIND DIRECTION
                        N   NNE   NE   ENE    E   ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED        11.   8.   4.    5.   5.    5.   5.   5.   2.   6.   7.   7.   8.  11.   9.  10.
    MPH

   GT   24     :                                                                                 :         0.

  18 -  24     :                                                                                 :         0.

  12 -  18     :                                                                                 :         0.

   7 -  12     :       13    1                                             5    2   10   19   11    6 :    67 11.

   3 -   7     :       24   12    5     8   20   27   25    5        20   41   24   46  122   33   13 :   425 70.

   LT    3     :        2   11    8    10   11   15    9    4    5    4   10   11    9    6    2    1 :   118 19.

    TOTAL      :       39   24   13    18   31   42   34    9    5   24   56   37   65  147   46   20 :   610

   PERCENT     :       6.   4.   2.    3.   5.   7.   6.   1.   1.   4.   9.   6.  11.  24.   8.   3. :       100.
               ...................................................................................................

                    TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -         5(   0.82 %)


                         PERCENTAGE OF A      STABILITY -  12.62 %
                         PERCENTAGE OF B      STABILITY -   5.25 %
                         PERCENTAGE OF C      STABILITY -  16.89 %
                         PERCENTAGE OF D      STABILITY -  49.18 %
                         PERCENTAGE OF E      STABILITY -  15.90 %
```

CORPORATION

```
                                         STABILITY WIND ROSE DIAGRAM

                                            C-B SHALE OIL PROJECT
                                 LEVEL =100 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - A
                                                                 WIND DIRECTION
                          N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED          12.  11.   4.   4.   2.   3.   2.   0.   0.   2.   1.   7.   4.   7.   8.   9.
     MPH


     GT    24    :                                                                                  :         0.

    18 -   24    :                                                                                  :         0.

    12 -   18    :        1                                                                         :      1  1.

     7 -   12    :        6    4                                                  1         1    2    1 :     15 21.

     3 -    7    :        8    4    5    1         1                              2    1    4    1    5 :     32 46.

     LT     3    :        4    2    3    2    2    0    1              1    1    2    3    1    0    0 :     22 31.

      TOTAL      :       19   10    8    3    2    1    1    0    0    1    1    5    4    6    3    6 :     70

     PERCENT     :      27.  14.  11.   4.   3.   1.   1.   0.   0.   1.   1.   7.   6.   9.   4.   9. :        100.
                     ..........................................................................................

                             TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          3(    4.29 %)
```

CORPORATION

```
                              STABILITY WIND ROSE DIAGRAM

                                 C-B SHALE OIL PROJECT
                        LEVEL =100 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - B
                                                  WIND DIRECTION
                        N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW TOTAL  %
GROUP MAX SPEED       11.   5.   2.   2.   4.   0.   5.   4.   3.   0.   0.   5.   4.   7.   9.   7.
     MPH


     GT   24     :                                                                                :      0.

    18 -  24     :                                                                                :      0.

    12 -  18     :                                                                                :      0.

     7 -  12     :     2                                                        1    3    1 :    7 16.

     3 -   7     :     3    4              1         2    1    1              2    3    2    3    2 :   24 55.

     LT    3     :     0    0    2    5    1         0    0    0              1    1    1    2    0 :   13 30.

      TOTAL      :     5    4    2    5    2    0    2    1    1    0    0    3    4    4    8    3 :   44

    PERCENT      :   11.   9.   5.  11.   5.   0.   5.   2.   2.   0.   0.   7.   9.   9.  18.   7. :     100.
                 ..................................................................................................

                     TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          0(    0.00 %)
```

```
                                        STABILITY WIND ROSE DIAGRAM

                                          C-B SHALE OIL PROJECT
                                 LEVEL =100 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

STABILITY CLASS - C
                                                          WIND DIRECTION
                       N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED       7.   6.   4.   6.   5.   5.   6.   5.   6.   0.   4.   5.   8.   7.   9.   6.
    MPH


   GT   24    :                                                                                  :        0.

 18 -   24    :                                                                                  :        0.

 12 -   18    :                                                                                  :        0.

  7 -   12    :    2                                                          1    5    6          :   14 14.

  3 -    7    :    2    6    1    3    4    4    5    2    2         3    5    9    6   16    1 :   69 71.

  LT    3     :    0    1    1    2    2    3    1    1    0         0    0    3    0    0    0 :   14 14.

   TOTAL      :    4    7    2    5    6    7    6    3    2    0    3    5   13   11   22    1 :   97

  PERCENT     :   4.   7.   2.   5.   6.   7.   6.   3.   2.   0.   3.   5.  13.  11.  23.   1. :      100.
                 ...........................................................................................

                          TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        1(   1.03 %)
```

```
                                      STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                                 LEVEL =100 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - D
                                                         WIND DIRECTION
                       N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED      12.   8.   4.   4.   4.   7.   6.   6.   7.   5.   4.   6.   8.  13.  10.   9.
     MPH


     GT   24    :                                                                                  :        0.

   18 -   24    :                                                                                  :        0.

   12 -   18    :    1                                                        2                    :     3  1.

    7 -   12    :    7    2                   1                   1              4    8   50   21    1 :    95 30.

    3 -    7    :    1    0    2    3    4   20   19    4    1    6   12   10   21   62   23    2 :   190 61.

     LT    5    :    0    1    2    0    1    3    3    3    2    3    1    3    3    1    0    0 :    26  8.

      TOTAL     :    9    3    4    3    5   24   22    7    4    9   13   17   32  115   44    3 :   314

    PERCENT     :   3.   1.   1.   1.   2.   8.   7.   2.   1.   3.   4.   5.  10.  37.  14.   1. :      100.
                ..........................................................................................

                        TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -         3(   0.96 %)
```

CORPORATION

```
                                        STABILITY WIND ROSE DIAGRAM

                                           C-B SHALE OIL PROJECT
                                LEVEL =100 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - E
                                                               WIND DIRECTION
                         N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW   TOTAL  %
GROUP MAX SPEED         14.  11.    1.    0.    4.    6.    5.    6.    1.    2.    3.    3.    8.   12.    8.   11.
    KPH


      GT   24    :                                                                                                     :      0.

    18 -   24    :                                                                                                     :      0.

    12 -   18    :       2                                                                     1                       :    3  4.

     7 -   12    :       6     3                                                         3    12     2     1           :   27 33.

     3 -    7    :       0     1                 2     5     7     3                 3     1     8    10     2     0   :   42 51.

      LT    3    :       0     1     2           0     2     1     1     1     1     0     0     1     0     0     0   :   10 12.

      TOTAL      :       8     5     2     0     2     7     8     4     1     1     3     1    12    23     4     1   :   82

     PERCENT     :      10.    6.    2.    0.    2.    9.   10.    5.    1.    1.    4.    1.   15.   28.    5.    1.  :     100.
                  ..........................................................................................................

                           TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          3(   3.66 %)
```

```
                               STABILITY WIND ROSE DIAGRAM

                                 C-B SHALE OIL PROJECT
                        LEVEL =100 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

STABILITY CLASS - TOTAL
                                                              WIND DIRECTION
                     N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW  TOTAL  %
GROUP MAX SPEED     14.  11.   4.   6.    5.   7.   6.   6.    7.   5.   4.   8.    8.  13.  10.  11.
     MPH

    GT   24    :                                                                                  :        0.

  18 -   24    :                                                                                  :        0.

  12 -   18    :     4                                                                5           :      7  1.

   7 -   12    :    23     9                      1                  1             5    12    69    34     4 :    158 26.

   3 -    7    :    14    15    8     7   11    30    33    10     4     6    18    20    42    84    45    10 :    357 59.

   LT     3    :     4     5   10     9    6     8     6     5     3     5     2     6    12     4     5     0 :     88 14.

     TOTAL     :    45    29   18    16   17    39    39    15     8    11    20    31    66   160    82    14 :   610

    PERCENT    :    7.    5.   3.    3.   3.    6.    6.    2.    1.    2.    3.    5.   11.   26.   13.    2. :      100.
                ......................................................................................................

                         TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -       10(    1.64 %)


                                  PERCENTAGE OF A       STABILITY -  11.04 %
                                  PERCENTAGE OF B       STABILITY -   7.21 %
                                  PERCENTAGE OF C       STABILITY -  15.90 %
                                  PERCENTAGE OF D       STABILITY -  51.48 %
                                  PERCENTAGE OF E       STABILITY -  13.40 %
```

CORPORATION

```
                                        STABILITY WIND ROSE DIAGRAM

                                            C-B SHALE OIL PROJECT
                                  LEVEL =200 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

   STABILITY CLASS - A
                                                                 WIND DIRECTION
                           N   NNE    NE   ENE     E   ESE    SE   SSE     S   SSW    SW   WSW     W   WNW    NW   NNW  TOTAL  %
 GROUP MAX SPEED         15.   13.    4.    3.    2.    2.    2.    4.    5.    0.    0.    3.    5.    8.    5.   12.
     MPH


      GT   24     :                                                                                                   :       0.

    18 -   24     :                                                                                                  .:       0.

    12 -   18     :        3     1                                                                                  1 :     5  6.

     7 -   12     :       12     1                                                                        2         2 :    17 19.

     3 -    7     :       10     4     6     1                       3     1                 2     2     4     3     3 :    39 44.

      LT    3     :        3     3     2     1     3     3     5     2     1                 2     1     0     1     1 :    28 31.

       TOTAL      :       26     9     8     2     3     3     5     5     2     0     0     4     3     6     4     7 :    89

     PERCENT      :      31.   10.    9.    2.    3.    3.    6.    6.    2.    0.    0.    4.    3.    7.    4.    8. :      100.
                     ..............................................................................................................

                                TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          2(    2.25 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                      C-B SHALE OIL PROJECT
                           LEVEL =200 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS = B
                                                                 WIND DIRECTION
                          N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED         11.   6.   0.   3.   5.   2.   2.   3.   6.   0.   0.   6.   5.   7.   8.   7.
     MPH


      GT   24    :                                                                                 :        0.

    18 -   24    :                                                                                 :        0.

    12 -   18    :                                                                                 :        0.

     7 -   12    :    2                                                               1    1    1  :     5 12.

     3 -    7    :    2    3         2    1              2    2              3    4    5    3    2  :    29 71.

      LT    3    :    1    0         0    3    2    1    0    0              0    0    0    0    0  :     7 17.

      TOTAL      :    5    3    0    2    4    2    1    2    2    0    0    3    4    6    4    3  :    41

      PERCENT    :  12.   7.   0.   5.  10.   5.   2.   5.   5.   0.   0.   7.  10.  15.  10.   7.  :      100.
                 .....................................................................................

                       TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -         3(   7.32 %)
```

```
                                   STABILITY WIND ROSE DIAGRAM

                                       C-B SHALE OIL PROJECT
                            LEVEL =200 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - C
                                                           WIND DIRECTION
                          N  NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED          7.   5.   5.   6.   5.   3.   6.   6.   8.   5.   2.   5.   8.   7.  10.  11.
   MPH


     GT   24    :                                                                                    :       0.

    16 -  24    :                                                                                    :       0.

    12 -  18    :                                                                                    :       0.

     7 -  12    :        1                                       1                   1    2   14    1 :    20 22.

     3 -   7    :        2    2    3    3    2    1    7    5    4    1         4    6   11   10    0 :    61 68.

     LT    3    :        0    1    1    0    0    0    2    2    0    0    1    0    1    1    0    0 :     9 10.

      TOTAL     :        3    3    4    3    2    1    9    7    5    1    1    4    8   14   24    1 :    90

    PERCENT     :       3.   3.   4.   3.   2.   1.  10.   8.   6.   1.   1.   4.   9.  16.  27.   1. :      100.
                ..............................................................................................

                        TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          2(    2.22 %)
```

CORPORATION

```
                                     STABILITY WIND ROSE DIAGRAM

                                        C-B SHALE OIL PROJECT
                             LEVEL =200 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - D
                                                               WIND DIRECTION
                          N   NNE   NE   ENE    E   ESE   SE   SSE    S   SSW   SW   WSW    W   WNW   NW   NNW   TOTAL  %
GROUP MAX SPEED          14.   7.   5.   4.    2.   4.   5.   7.    8.   9.   5.   8.    7.  12.  10.   6.
    MPH


    GT   24     :                                                                                          :        0.

  18 -   24     :                                                                                          :        0.

  12 -   18     :         1                                                                3               :      4  2.

   7 -   12     :         4    1                               1    3    3          1     1   30   60      :    104 39.

   3 -    7     :         1    1    2    1           2    7   11    6    3    1    9    12   42   35    5  :    138 52.

    LT    5     :         2    0    0    0     3     3    5    1    0    0    1    1     2    0    0    0  :     18  7.

     TOTAL      :         8    2    2    1     3     5   12   13    9    6    2   11    15   75   95    5  :    264

    PERCENT     :        3.   1.   1.   0.    1.    2.   5.   5.   3.   2.   1.   4.    6.  28.  36.   2.  :       100.
                         .....................................................................................................

                                 TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -          2(   0.76 %)
```

CORPORATION

```
                              STABILITY WIND ROSE DIAGRAM

                                C-B SHALE OIL PROJECT
                      LEVEL =200 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

STABILITY CLASS - F
                                                        WIND DIRECTION
                    N   NNE   NE   ENE   E   ESE   SE   SSE   S   SSW   SW   WSW   W   WNW   NW   NNW  TOTAL  %
GROUP MAX SPEED   15.   13.   0.   2.   0.   2.   6.   6.   10.  10.   5.   4.   6.  12.  10.   9.
    MPH


   GT   24   :                                                                                  :       0.

  18 -  24   :                                                                                  :       0.

  12 -  18   :     9     2                                                          1           :  12 11.

   7 -  12   :     9     1                                   2     3                14   17   1 :  47 43.

   3 -   7   :     1 -   2                        1    4     1     0    1    4    3  12    9   0 :  38 35.

  LT     3   :     0     2          1         1   3    2     1     2    0    0    0   0    0   0 :  12 11.

   TOTAL     :    19     7     0    1    0    1   4    6     4     5    1    4    3  27   26   1 ; 109

  PERCENT    :   17.    6.    0.   1.   0.   1.  4.   6.    4.    5.   1.   4.   3. 25.  24.  1. :     100.
               ..........................................................................................

                       TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -         2(   1.83 %)
```

```
                              STABILITY WIND ROSE DIAGRAM

                                  C-B SHALE OIL PROJECT
                        LEVEL =200 FEET  PERIOD( 2/ 1/77 TO  2/28/77)

 STABILITY CLASS - TOTAL
                                                 WIND DIRECTION
                    N   NNE   NE  ENE    E  ESE   SE  SSE    S  SSW   SW  WSW    W  WNW   NW  NNW  TOTAL  %
GROUP MAX SPEED   15.   13.   5.   6.   5.   4.   6.   7.  10.  10.   5.   8.   8.  12.  10.  12.
   MPH


    GT   24    :                                                                                 :       0.

    18 -  24   :                                                                                 :       0.

    12 -  18   :   13    3                                                          4          1 :   21  4.

     7 -  12   :   28    3                             1    6    6         1    2   49   92    5 :  193 32.

     3 -   7   :   16   12   11    7    3    3   15   25   14    4    2   22   27   74   60   10 :  305 51.

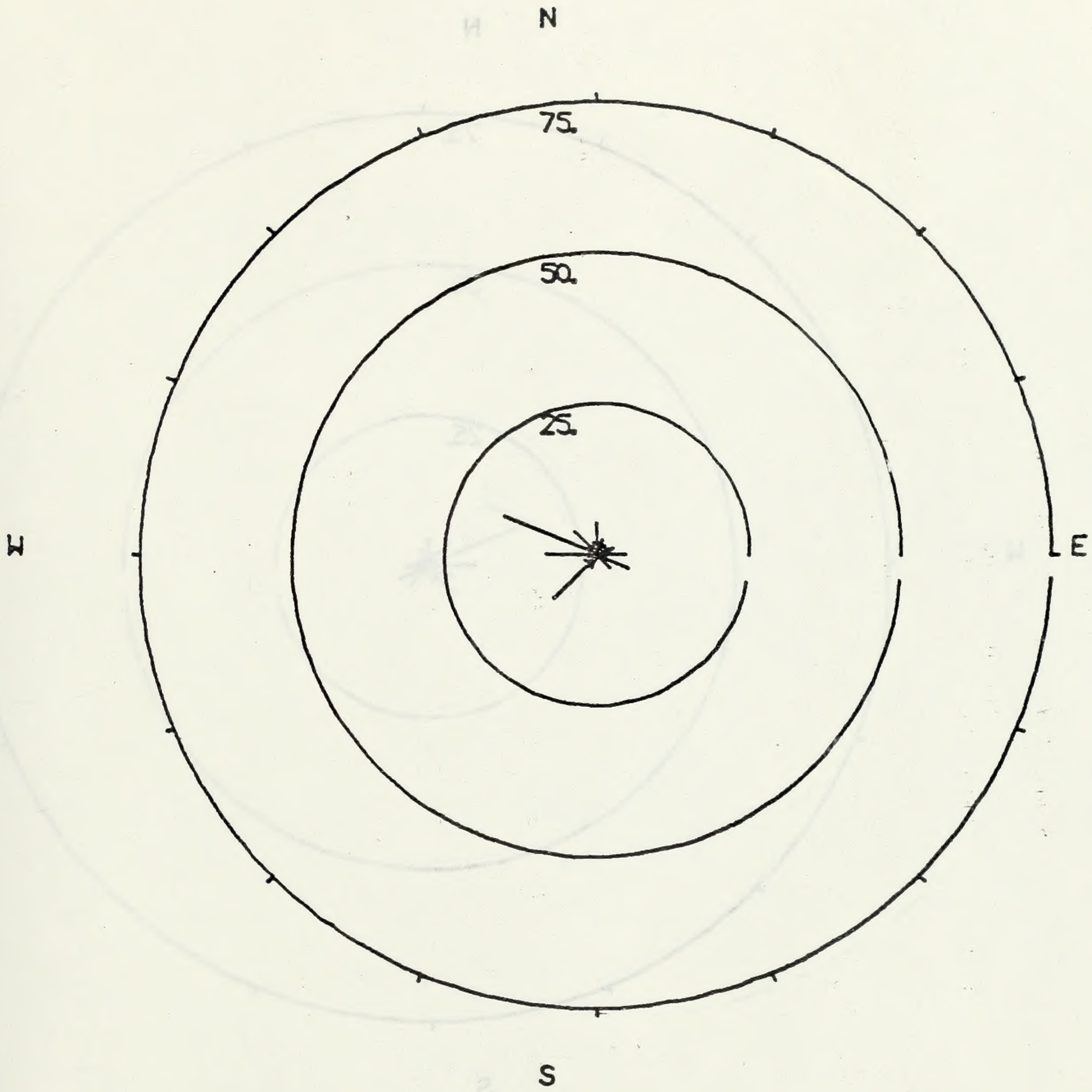
    LT    3    :    6    6    3    2    9    9   16    7    2    2    2    3    4    3    2    1 :   77 13.

      TOTAL    :   63   24   14    9   12   12   31   33   22   12    4   26   33  130  154   17 :  596

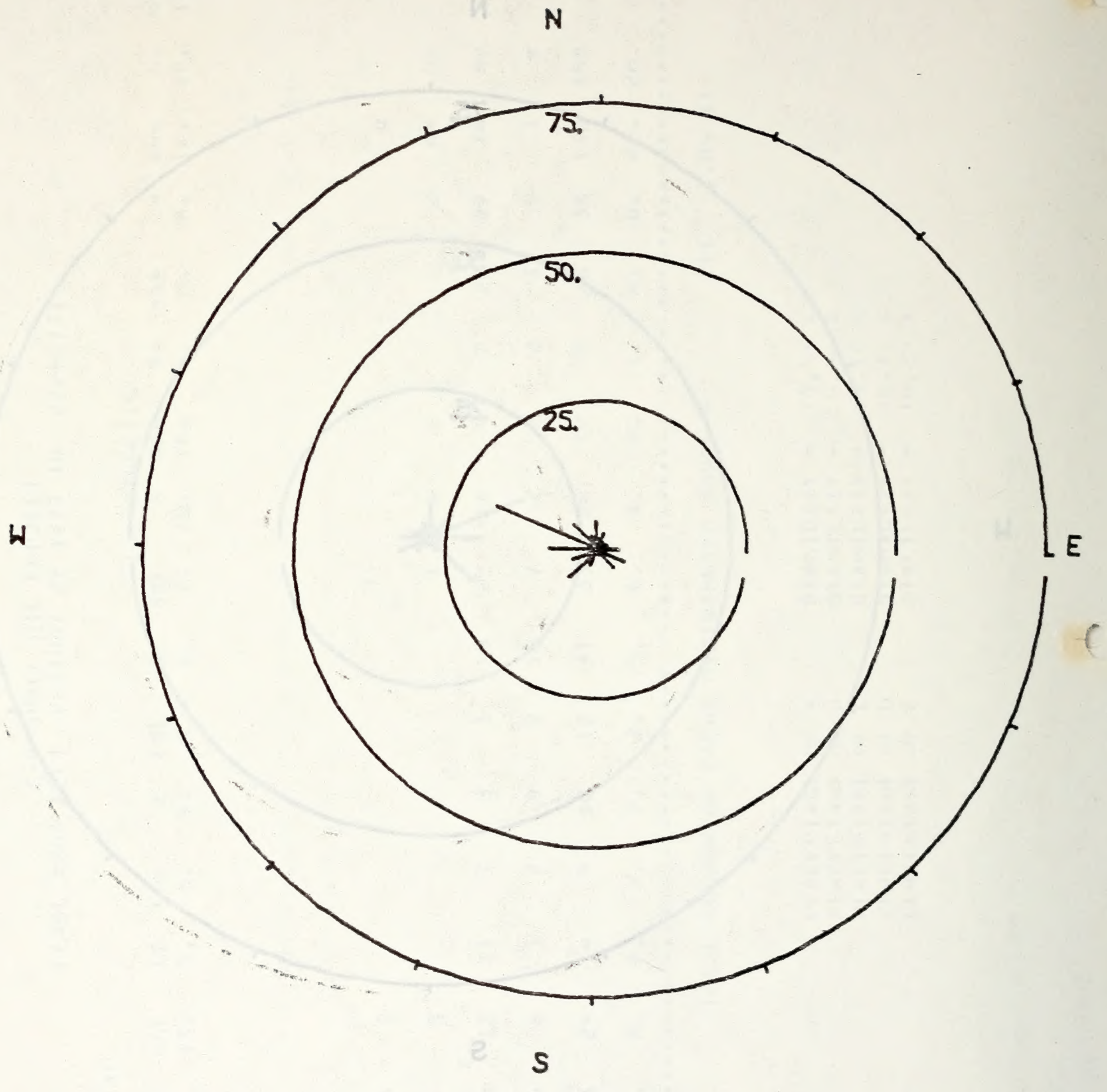
    PERCENT    :  11.   4.   2.   2.   2.   2.   5.   6.   4.   2.   1.   4.   6.  22.  26.   3. :     100.
               ..........................................................................................

                     TOTAL NUMBER OF CALMS DISTRIBUTED ABOVE -        11(   1.85 %)

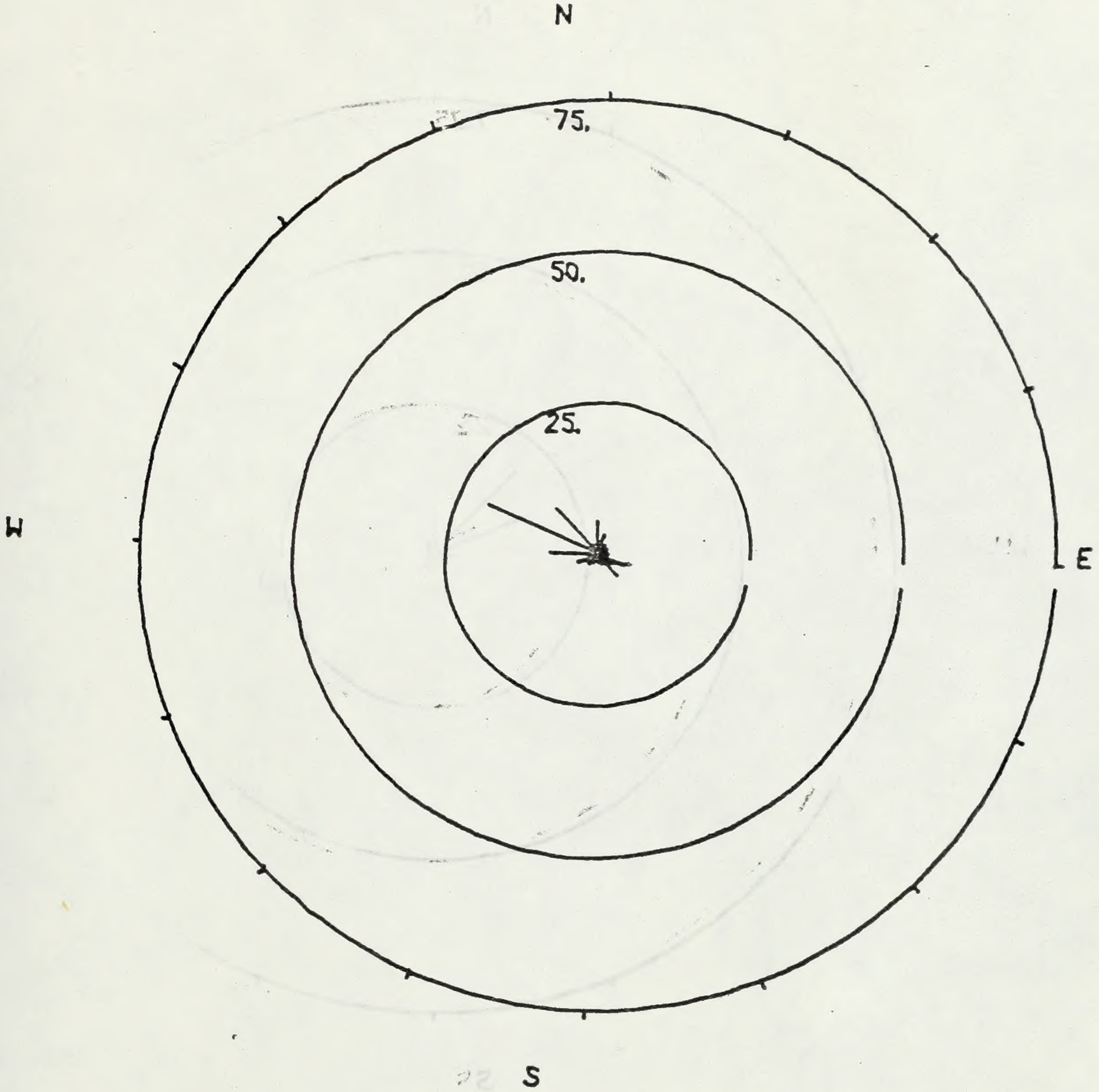

                       PERCENTAGE OF A        STABILITY -  14.93 %
                       PERCENTAGE OF B        STABILITY -   6.85 %
                       PERCENTAGE OF C        STABILITY -  15.10 %
                       PERCENTAGE OF D        STABILITY -  44.53 %
                       PERCENTAGE OF E        STABILITY -  18.29 %
```



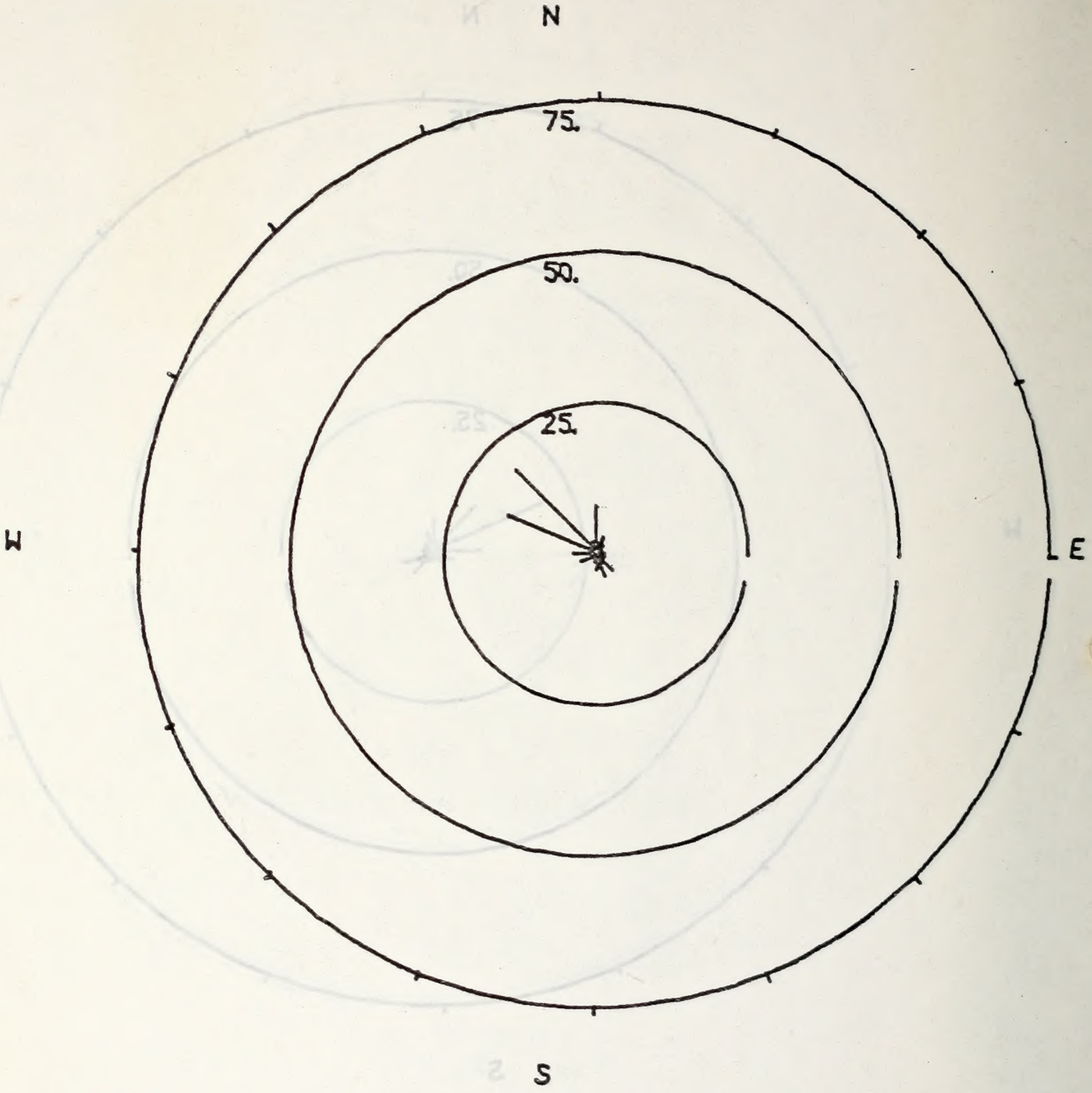
PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 8 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 30 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 100 FOOT LEVEL



PERCENTAGE OF OCCURRENCE OF WIND DIRECTION FOR 200 FOOT LEVEL